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ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

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GRAND RAPIDS, MICH., APRIL, 1916

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Vol. XV

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No. 4

Original Articles

THE VALUE AND IMPORTANCE OF MATERNITY HOSPITALS.*

E. GUSTAV ZINKE, M.D., F.A.C.S.
CINCINNATI, OHIO.

Synopsis.—Existing conditions in obstetric practice. Indifference of the profession alone responsible for the ignorance of the laity. My own experience with the practice of obstetrics. Every physician, no matter how favorable his experience with obstetrics may have been, should always realize that pregnancy, from the beginning to the end, is, under the most favorable conditions, an event of grave importance. If a given case portrays signs or symptoms indicative of complications before or during labor, the patient should be conveyed to a hospital before it is too late to bestow upon her the full benefit of what the art and science of midwifery affords under the most favorable condition. Are we ready to admit that the present practice of midwifery cannot be improved? Must we go on with a practice which annually impairs or destroys a number of lives? What are the objections of the profession and laity to the practice of obstetrics in hospitals? Hospital deliveries, attended by well trained obstetricians, assistants and nurses, are the only means by which the present still high maternal and foetal morbidity and mortality can be effectually and permanently reduced.

For more than twenty years the writer has publicly, in writing and in the lecture-room, advocated the necessity of maternity hospitals. He has repeatedly set forth the advantages which will accrue to women in labor, the child to be born, the benefits to mankind, the comfort and satisfaction to the obstetrician in attendance upon these cases in maternity hospitals. In well-conducted lying-in hospitals, undoubtedly, the suffering of the mother during labor may be greatly allayed and abridged, and what is of equal, if not more importance, the maternal and foetal morbidity and mortality may be lessened to a degree not obtainable when child-deliveries are conducted in the patient's home or in hospitals where all kinds of diseases and accidents are treated.

No obstetrician of experience, having the interest of mankind, especially suffering woman-kind, at heart will deny the truth of the above statement. Forty years of almost daily observations in obstetrics have convinced the writer that this states the real condition of things.

Notwithstanding, the science and art of midwifery has never been more complete and better understood than now. There is a marked improvement in the practice of obstetrics, especially in the larger cities with hospitals and medical schools. But even in these localities, but more particularly in smaller towns, villages, and in country districts everywhere, the practice of obstetrics is not what it might or should be to-day. More than that, in many—too many—instances the management of pregnancy, labor and confinement does not differ much from the practice in vogue forty years ago. And it must be admitted that, occasionally, scenes are observed in the confinement-chamber which remind one of medieval days, and for which there is no excuse, but an indifference on the part of the medical profession in particular, and ignorance on part of the laity in general.

Little can be said against the modern method of teaching obstetrics. There are, indeed, comparatively few subjects of practical value connected with the science of midwifery which should not be well understood. Perhaps it is not too much to say that this subject was never better taught than at present.

Why, then, this persistent indifference of the profession, which alone seems responsible for the ignorance of the laity? Permit me to mention the principal reasons:

It dawns upon the medical student long before he completes his course of study that the practice of obstetrics involves grave responsibility, hard work, long hours and little or no pay. The young practitioner soon realizes the truth of this, and many of them, as they gain in experience and advance in years, abandon the practice of midwifery and turn their attention to other less laborious and more profitable fields in medicine and surgery.

*Read before Section on Gynecology, M.S.M.S., Sept., 1915.

Thus it happens that many medical students study obstetrics only just enough to meet the requirements for graduation. They never intend to practice it. Other young practitioners accept obstetric cases and devote much time and attention to them; but they soon tire of the practice and lose interest in the work, because of the responsibility and worry, as well as the meager remuneration therefor. Another set of men are so fortunate in the beginning of their professional life as to encounter only so-called easy cases. Because of their accidental success they soon believe themselves masters in obstetrics, neglect the study of it and become careless and indifferent. When subsequently they encounter troublesome cases they send for assistance and consultation, and no matter what the result may be, they are always sure to have done their full duty in the case before them. This class of practitioners is by no means small, and most of them regard labor cases lightly. And these are the men who most unreasonably oppose hospital deliveries.

There are comparatively few men among the general practitioners who continue the study of obstetrics and who become experts scientifically as well as practically. Though they are frequently handicapped in the performance of their work, because of lack of proper surroundings and of trained assistants, many of these able men willingly persist in treating difficult and complicated labor cases at the homes of patients, and not a few strenuously oppose sending obstetric patients to hospitals for confinement.

The problem of the *indifference of the profession* is easily solved when we consider the first four classes of the medical men just described; but it is absolutely impossible to explain why some of the men belonging to the fifth class persistently refuse to send their obstetric cases to maternity hospitals when conditions unmistakably indicate impending complications, and when hospital facilities are within easy reach.

Thirteen years ago the writer read a paper on "The Practice of Obstetrics" in the Section of Obstetrics and Diseases of Women of the American Medical Association¹ in which the confinement of women in hospitals was earnestly advocated as the best means of reducing the maternal and foetal mortality and morbidity resulting from labor. Those who discussed my paper not only agreed with me, but created the impression that the paper contained nothing new, and that the views expressed therein were

commonly accepted. The men who spoke were from New York.

Today we know, that while in the Eastern cities the practice of delivering women in hospitals is more frequent than in the Middle West, the far West and in the South, it is by no means as frequent as it should be, and the majority of practitioners all over the country, New York not excepted, consider "hospital deliveries" nothing more than a "modern fad." It is strange how little the subject of hospital deliveries has been seriously considered by the average general practitioner.

The speaker has completed his fortieth year in the practice of medicine; sixteen of these years have been devoted to general practice and the remainder to the teaching and practice of obstetrics and gynecology. He has had occasion to observe more than 4,000 labor cases. This includes all the cases attended by him in private practice, those in consultation with others, as well as the cases delivered at the Ohio Maternity Hospital and Out-Door Obstetric Clinic of the Medical Department of the University of Cincinnati. This experience has made him intimately acquainted with the science as well as the practice of obstetrics of the past and present. He has witnessed scenes in the confinement-chamber, charming because of the pleasant environments of the home and the presence of dear friends, and because everything in connection with the case occurred without much suffering or dangerous accident and terminated with an ease and satisfaction so beautiful that heaven itself could not improve upon it. You have all witnessed the like. No wonder that those familiar with scenes like these and similar ones, though perhaps not quite so attractive, speak ardently in favor of deliveries at home. Fortunately or unfortunately, there are many cases like the above—fortunately, for those who escape unharmed the treacherous sea of pregnancy, the reefs and locks of labor and the storm of the puerperium; unfortunately for those, who, because of former fortunate experience of their own or others are lulled in the sweet hope of a safe passage and neglect to protect themselves from impending perils.

Some, if not all of you, know from observation how a home filled with hopeful expectation, joy and happiness may suddenly be turned into one of horror-stricken consternation and deep mourning. The laity is no stranger to these sad events. Every community records, annually, tragedies occurring in the *chambre d'accouchement*, many of which, it cannot be denied, might have been averted had the case been

1. St. Paul meeting.

carefully studied in advance and the necessary precautions taken.

It has never been my desire to create the idea that all the calamities that may befall a woman during pregnancy, labor and confinement can be prevented at all times; only that the number of mournful fatalities connected with child-bearing can be greatly reduced and a great deal of the frequent invalidism now following labor may be avoided.

Every physician, no matter how favorable his experience with obstetrics may have been, should always realize that pregnancy, from the beginning to the end, is, under the most favorable conditions, an event of grave importance. Like a soldier who goes into battle, the physician nor the mother knows, whether death will claim her or whether she will be crippled for life, or go through the ordeal unharmed a happy mother and a better woman. There are many doctors, the world over, who look upon pregnancy and all pertaining to it as neither a serious nor difficult proposition and consequently, the laity thinks less of it still. It is well known that, even in these days, a physician is not always called to a case before labor has begun; and also that some physicians, when they are consulted before the end of term, do not deem it necessary to make a careful examination or investigation of the case, and thus they have little or no advice to give except, perhaps, to "keep the bowels open," "be careful not to work too hard," and "call me as soon as the pains begin."

The hygiene of pregnancy is, though of the utmost importance, too often ignored. If not, it is more or less neglected. The same may be said of *pelvimetry*, the *diagnosis of the attitude of the fetus in utero*, as well as the *preparation for labor* previous to the event.

To remedy these shortcomings, the practice of obstetrics should be more in the hands of specialists of this department. The reason we have not as many specialists in obstetrics as we have in the other branches of medicine and surgery lies in the fact that a great many who bear the title of M.D. accept obstetric cases because of the expected fee and not because of their interest in obstetrics. It is a remarkable fact that many women are delivered by men who follow other specialties; men who openly confess they do not like obstetrics, and that they know little or nothing of midwifery. But the prospect of a handsome fee is frequently a great temptation and then these men are willing to take a chance. Thus the obstetric specialist, if he confines himself strictly to his specialty, soon discovers that it is hard for him "to keep the

wolf from the door." The teacher of obstetrics is the logical specialist; but because of the custom of the day, if he does not do general work, to secure for himself and his family respectable living, he practices, in addition to obstetrics, gynecology or pediatrics, or both. The result is that obstetrics as a specialty pure and simple does not exist. But there are a few who do make midwifery a special study, though they do not practice it exclusively. The truth is obstetrics and gynecology should never have been divided. A good obstetrician is always a gynecologist. A good gynecologist is by no means always an obstetrician. It is the duty of all who accept care of pregnant women, not only to be thoroughly familiar with the hygiene, physiology and anatomy of gestation, of labor and the puerperium, obstetric diagnosis and prophylaxis, but they should also give the patient the full benefit of the intimate knowledge these subjects yield.

When, in the course of an examination and treatment of a case, it is discovered that the patient cannot be successfully taken care of at home either before, during or after labor, as is often the case in tenement houses, overcrowded districts or distant parts of the country, the patient should be advised to go to a good hospital. The same may be said of all cases of threatened or already existing complications. *Put the patient where you or someone else can give her the necessary attention, and, if the case requires it, the advice and assistance of an expert.* In other words, confinement patients should be treated like other patients whose ailments assume, or threaten to assume, a serious aspect, as, for instance, certain surgical cases which may in time require the skill and experience of a specialist.

Is it not now the custom all over the civilized world to send all difficult and complicated cases, medical and surgical, while the patient is still in good condition to hospitals? Why should we hesitate to do the same with the child-bearing woman?

I firmly believe that every pregnant woman should avail herself, if convenient, of the advantages of a hospital when the time of giving birth has arrived. At the hospital she is surrounded by security not obtainable at her residence. No matter what difficulties or complications may arise, they can be more promptly and more effectually met in a maternity hospital; not so in the patient's home.

It is readily admitted that, ordinarily, in normal cases, the home is perhaps as safe a place as the hospital. *But what of the help and*

accommodations at home as compared with the conveniences of a hospital? What of the expense? What of the physician who burdens himself with the responsibility of the work and worry that the management of a labor case at home demands? Those of you who have spent years in the private practice of obstetrics and later delivered women in hospitals will realize the difference? Home deliveries always demand more of the physician's time; the management of the case is more difficult and quite often unsatisfactory in the end. At the hospital even grave and complicated cases may frequently be conducted with comparative ease, entire satisfaction and unnecessary loss of time.

There was a period in history when hospitals were quite *unpopular with the profession*, and more so with the laity. There were good reasons for this. But with the advent of antiseptics, asepsis and the trained nurse there came a vast change for the better. The mortality of hospitals, formerly very high, has been notably reduced. For this reason many general practitioners, as well as the specialists, send the cases requiring particular care early to a hospital for treatment. In some instances, at the suggestion of the family physician, patients willingly travel hundreds of miles to obtain the needed hospital accommodations, and sometimes for conditions far less serious than a complicated case of labor.

Unless maternity hospitals become more popular and physicians more painstaking in the management of the pregnant, there is little hope for progress in the practice of midwifery in the near future. To make the hospital practice of obstetrics more popular, every physician of good repute should have the privilege of the hospital. The advantages and prerogatives of the hospital should not be limited to a staff of a favored few. The doors must be open to all practitioners in good standing. The Bethesda Maternity and the Obstetric Wards of the German Deaconess Hospital of Cincinnati are conducted on this plan.

In my opinion, the hospital is the best and safest place for women to pass through the ordeal of labor. This does not mean that every woman pregnant cannot be safely confined at home. It does mean, however, *and this is what must be driven to the heart and mind of every accoucheur, wife and husband, that if a given case portrays signs or symptoms indicative of complications before or during labor, the patient should be conveyed to a hospital before it is too late to bestow upon her the full benefit of what the art and science of midwifery afford.*

This, in turn, means that the patient should present herself to the physician early in her pregnancy, the earlier the better. *If he is competent and does his duty*, everything will be done to secure for her the best opportunity to evade the dangers that may jeopardize her health or life and that of her offspring.

The most essential points that should be determined in every case of pregnancy, as early as circumstances and conditions will permit, are:

1. Does pregnancy really exist? If so
2. Is it intra-uterine?
3. Is the patient well or is she the victim of some disease or deformity?
4. Is the pelvis sufficiently ample to permit of the passage of a full-term child?
5. What is the attitude of the child in utero?
6. Are there indications of an ectopic implantation of the placenta?

In the great majority of cases every one of these six points can be readily determined. Should it be impossible to ascertain the foetal attitude, it may possibly mean a faulty or a complex presentation, and the patient should be advised to go to a hospital for that reason.

If it is found that all is as it should be, and that during the further progress of gestation all continues well, the case may be satisfactorily treated at the patient's home, provided it is possible to secure the necessary aseptic conditions, that the usual preparations can be made for labor and the reception of the child, and that sufficient intelligent or trained help is to be at the physician's disposal. We know very well that, not infrequently, nature will do her work perfectly in the absence of every previous preparation on part of mother, nurse or physician; but not one of us has the right to depend upon nature alone, even under the most favorable environments.

If, on the contrary, it is found that the patient is not well, that she is not free from disease or deformity, that the pelvis is contracted or not sufficiently ample, that the presentation and position of the child is unfavorable, or that the placenta appears to be attached to the lower uterine segment, the case demands extra care, and it becomes merely a question of time and wisdom when it is best to take the patient to a hospital. An intractable or gradually increasing anemia, marked and continuous albuminuria, lesions of the heart or any other depressing constitutional disease, are conditions which should always cause serious apprehensions and

commend the hospital as the safest harbor in which to weather the approaching storm.

There are still too many of the unfortunate women, victims of one or several of the above mentioned complications, kept at their homes for treatment and delivery upon the advice of the medical attendant. Despite what has been said and written during the past decade he still stands ready to cope with adverse circumstances and perplexities with a heroism that would challenge admiration were it not for the fact that he might do more and much better for his patient, had he availed himself of the benefits of a hospital at an opportune moment. As it is, too often everything is done, or attempted, at the patient's home. Sometimes both mother and child escape the waves and whirlpool of a stormy labor, and live; the former perhaps destined to a life of invalidism, the latter to a short existence. Sometimes the life of one or both will be sacrificed at once. In some instances the curtain closes the tragedy while the unfortunate patient is being conveyed to, or shortly after her arrival at, the hospital.

Is it impossible to improve the present practice of midwifery? Must we continue with a custom which annually cripples or destroys a number of lives? Shall we continue a mode of action begotten of ignorance, and maintained by sentiment without further effort to change for the better?

There are to-day a number of professional men who advocate maternity hospitals. But few have had the courage to speak out openly in the past. Ten years ago the speaker stood alone in his own community and his own state. It is, indeed, remarkable, and in the light of our present knowledge and recent progress in medicine and surgery, altogether incomprehensible, why there should still be objections, especially on the part of the profession, to the practice of obstetrics in hospitals.

Physicians continue to argue that there is more danger from sepsis in hospitals than in the patient's home. It cannot be denied that septic cases will be found at times, though not always, in hospitals; but it should be understood that, in nearly every case, the sepsis developed before the patients were admitted, and that they were taken to a hospital that their lives might be saved. If patients have a better chance to recover from septic complications at the hospital than at home, it follows that in hospitals it is easier to protect patients against infection. The author has observed cases of labor in which sepsis followed, primarily, confinement at a hospital. He has seen quite a number of cases

of profound "home-made" puerperal sepsis brought to the hospital and recover and not a few patients who died of this complication at home for the want of proper care. In the hospital the patient is surrounded by a security not obtainable at home, because any of the difficulties or complications that may arise can there be more promptly and more effectually met.

The prejudice of the laity against hospitals is far less marked today than formerly. Intelligent people know that more can be done for the sick in such institutions than at home, and that the results accomplished in them are much more satisfactory. This applies as well to obstetrics as to surgery. However, ordinarily, women are not willing to go to a hospital for the purpose of confinement. They do not readily appreciate the reasons why the baby should not be born with safety at home. Do not the great majority of women promptly recover from the effects of labor when delivered at home? Are not most babies born alive and live, even when born under difficulties and in surroundings not exactly favorable to the occasion? Yes, but only to a limited extent.

Let us put aside for a moment those cases in which one or both lives are lost immediately or some time after labor. Let us consider only those in which, seemingly, all went well at the time of or shortly after the birth of the child. Has any one kept an accurate account of the invalidism with which women become afflicted after they have had one or several children in an apparently natural manner? We refer here to the invalidism, the direct result of a want of care during labor and the puerperium. No record worthy of consideration has ever been kept of these cases; but we may judge of the frequency with which ill-health follows labor by the prosperity of the numerous gynecologists the world over. No doubt, in some instances, the fault lies with the attendant. But what of those cases in which the attending physician is not only competent and even assiduous in the performance of his work, yet because of the poor and insufficient equipment of the home is unable to bestow upon both mother and child all that might be done were they more advantageously situated in a hospital? It has always been the object of the writer not to discuss the careless or incompetent practitioner, but the conditions which prevent able and conscientious obstetricians from doing their best at all times.

Does it not seem proper that all women, whose homes are ill-suited to conduct a case of labor properly, should be induced to go to a hospital

when the time of giving birth has arrived, and to remain there until they have recovered from the effect of it and until involution of the genitalia is so far advanced that the return to home and work will not interfere with the completion of this process? It is admitted there can be no objection to this; but it is asked: "Where are there hospital facilities sufficient to follow out your advice?" If we are convinced that the women just spoken of are better off in a hospital, in order to obtain for themselves the full benefit of what the science and art of midwifery can do for them, it is our duty to educate the people and persist in advocating, publicly, the building of hospitals for this purpose.

This is not only a question of individual safety so far as the child-bearing woman is concerned, but at this very time of the world's history more than ever one of social and national economy. A healthy woman means a helpful wife, a better mother, also a better husband, better children and a better and happier home. It has been said that the strength and safety, prosperity and longevity of a nation depend upon the character of its homes and the number of healthy children therein. Only for this, and for this alone, where would Germany be today? This is not only true, but should be a sacred altruism with us. The building and frequent use of maternities, will to a great extent prevent afflictions that now follow so often in the wake of motherhood, and thus prove themselves a blessing to our homes and one of the greatest boons to the country. There is no better argument *why maternity hospitals are a public necessity*.

One of the principal causes of the much spoken of "race suicide" is, unquestionably, the fear women have of losing health or life if they submit to the trials of maternity; though not infrequently, in the desperate attempts of ridding themselves of the product of conception, they succeed in destroying health and sometimes, in causing untimely death.

The introduction of antiseptics into maternity hospitals is alone responsible for the happy fact that the much-dreaded child-bed fever has almost entirely disappeared in these institutions. The same cannot be said of confinement cases conducted at the home of the patient, and it is difficult to understand why physicians counsel against hospital deliveries, and why women who lack the most necessary accommodations at home are afraid to be delivered in a maternity.

Fifty years ago, the mortality of puerperal fever fluctuated between 4 and 5 per cent. (and

sometimes more) in the various hospitals and clinics. But where antiseptics has been conscientiously practiced during the past twenty-five years only one out of a thousand patients dies of septic causes in Germany.

The mortality of preventable child-bed complications is far greater in city and country practice than in maternities and hospital clinics. There can be no doubt of the causes. Midwives or physicians are usually not called until the last moment, and it sometimes happens that neither of them possess sufficient knowledge or natural aptitude. The conditions in this respect are particularly unfavorable in the country and in tenement houses in the city, where want of room and lack of cleanliness go hand in hand with wrong and insufficient nursing, inexperienced and unskillful obstetricians. All this affects the course and termination of labor and the puerperium unfavorably for both mother and child, and to the disadvantage of home and happiness as well as the welfare of the community at large. (Leopold).

According to Leopold, 6,000 deaths from puerperal causes were recorded over the entire German Empire in the year 1906 and of these 1,290 died of septic infection.

It is impossible to obtain reliable statistics concerning deaths during or soon after confinement in this country. Certain it is that, whatever the number may be, it will not fall short of, but probably exceed, the puerperal mortality rate of Germany.

Leopold, in speaking of this death rate as observed in his own country, says: "The war against such a mortality" (to say nothing of the morbidity) "should be carried on much more energetically than the war against smallpox and cholera. If every confinement case were attended by a well-trained nurse, a capable obstetrician and in surroundings approaching those of a maternity hospital, both the mortality and the morbidity of the confinement-chamber could be greatly reduced."

The practice of obstetrics today is not what it might be and what it ought to be. It can be improved in many ways. It is one of the important duties of the profession everywhere, to educate people so that they cannot fail to recognize the necessity of erecting public maternities. Years will pass before we will have them in sufficient number. Our duty is plain.

He who is familiar with the history of medicine generally, and of obstetrics particularly, knows that it is not any easy task to make innovations and change old customs. In the consideration of this subject personal interest

must be discharged. The question, *how will the change affect this one or that one?* must not be thrown in the balance. Only one motive must actuate us all: *Whatever is best for suffering womankind, that must we do.*

THE PRIMARY AND END RESULTS IN INOPERABLE CANCER OF THE CERVIX TREATED BY THE CAUTERY METHOD.*

WARD F. SEELEY, M.D.

Instructor in Gynecology, University of Michigan.

In considering a method of treatment of inoperable cancer of the uterus I realize full well that I am dealing with an almost hopeless condition as far as the ultimate outlook for the patient is concerned. All of you are only too familiar with the clinical picture of far advanced carcinoma of the uterus, the odor alone due to the infected sloughing, carcinomatous tissue enables you to make your diagnosis. Add to this frequent or continuous hemorrhage sufficient to keep the patient in a weakened condition, unable to help herself, constant dull nagging pain, and a despondent mental attitude from the fact that she has no hope, and what more pitiable condition can we imagine for a refined and sensitive patient. While the prognosis is always bad yet the patient has the right to expect that she may reach her end with the minimum of suffering to herself, her friends and relatives, and even perhaps gain respite for a few months or even years.

With this end in view many methods have been devised for the treatment of inoperable cancer of the uterus. Among them several deserve mention. Zinc chloride has been used for many years, its application consisting first in curetting or cutting away as much as possible of the carcinomatous tissue and then packing the cervical and uterine cavity with gauze wrung fairly dry in 75 per cent. solution of zinc chloride, the vagina being protected with gauze wrung out in a solution of sodium bicarbonate. The Gellhorn or acetone treatment consists in the direct application of acetone to the carcinomatous involvement with the idea that the resulting hardening of the tissue will control hemorrhage and discharge. The treatment should if possible be preceded by a thorough curetting of the ulcerated area. The cavity is then dried and from one-half to one ounce of acetone is poured into it through a Ferguson

or some other tubular speculum and left from fifteen to thirty minutes, the excess allowed to run out through the speculum and the cavity packed with a gauze strip soaked in acetone.

The X-ray treatment of carcinoma of the uterus has recently attracted considerable attention and the relief of pain following treatment is worthy of recognition. Unless a reliable radiographer is at hand, however, it had better not be attempted, as careless or unskilled use of the method has produced most disastrous results. The value of radium is as yet too little known to permit a positive statement in regard to its use. It is not a substitute for, but rather a supplement to, the surgical operation. Favorable results are reported in its use especially in the treatment of vaginal recurrences after operation. We must not, however, lose sight of the fact that some cases are apparently stimulated to more rapid growth by its use. I have seen one case of this kind in which there was an enormous recurrence in an exceptionally short time after the radium treatment. Still further, the price of radium salts is prohibitive in the treatment of the majority of patients.

Dr. J. F. Percy of Galesburg, Ill., perfecting the idea of Byrne of Brooklyn, N. Y., has originated a method of applying heat to the uterus and surrounding tissue which in our experience gives better and more lasting results than any of the above methods of treatment of inoperable carcinoma. That heat in a degree low enough to make its use practicable in the treatment of uterine cancer will destroy carcinoma cells has been fairly well proven. Loeb has shown that heating mouse carcinoma in water to 44 deg. Centigrade (111.2° F.) will render the cells inoculable. It has been demonstrated by Clowes that all tumor cells exposed to a temperature of 45 deg. Centigrade (123° F.) in the living body, die. Lambert showed that sarcoma cells are destroyed when exposed to 46 deg. C. (111.8° F.) for twenty minutes. Especially interesting is the observation by Vidal of arrested development of tumors in four patients with temperature above 40 deg. C. (104° F.) Thinking that this might be a mere coincidence, he exposed tumor bearing mice to temperatures above normal and found not only that their tumors showed degenerative changes, but that the mice lived longer than usual. A lympho-sarcoma in a dog also rapidly disappeared after puncture of the heat center, when the temperature rose to 40.8 deg. C. (105.4° F.)

The only agents worthy of consideration for

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practical application of heat in the treatment of cancer of the uterus are hot air, hot water, steam, electro coagulation and actual cautery. Hot air, hot water and steam have been shown by Doyen to be of little value because of their slight penetration: electro coagulation because of difficulty of control of the electrode and the complicated apparatus necessary is impracticable. There remains then the actual cautery, the value of which was recognized by Byrne in an article published in 1892. The use of the actual cautery has recently been revived by Percy and improved in at least two important particulars: (1) the protection of vagina and vulva from heat, (2) the protection of important pelvic structures by the hand of the assistant within the abdomen guiding the operator and permitting of a more thorough and more intelligent cauterization. Dr. Percy kindly demonstrated his technic at the University Hospital in October, 1912 and this has been followed in all our cases.

The idea of the cautery method is to destroy the carcinomatous tissue by the dissemination of a sufficient degree of heat through it to kill the malignant cells and yet not injure very materially normal tissue. To accomplish this Percy until recently advised that the cautery be used at a dull cherry red heat, the gross mass around the cervix being destroyed and the body of the uterus cauterized until a mere shell was left. This degree of heat converts the uterus into a charred mass as carbonization takes place. There can be no doubt but that this destroys the cancer cells in the immediate vicinity of the cautery point and that a moderate degree of dissemination of heat to more distant points occurs. However, it has been found that carbonization inhibits to a marked degree this dissemination and that a cautery iron hot enough to kill cancer cells does not need to be hot enough to char the immediate surrounding tissues. It is advised therefore that the cautery be used just hot enough to cause a distinct simmering and not hot enough to produce smoke or much smell of burning tissues. Cancer cells are destroyed at 50 deg. C.—55.5 deg. C. (131°—140° F.) (Percy.) The principle then of this method is not carbonization but the production and dissemination of heat through the gross mass of primary cancer.

The necessary equipment for carrying out this method of treatment is simple and inexpensive and consists in a water cooled speculum and cautery irons. The speculum is a double walled cylindrical affair permitting of a continuous flow of water beneath its layers. This

very efficiently protects the vagina and vulva from the heat. We have improved somewhat upon the speculum devised by Percy by adding a longer phlange to protect the vulva and a handle which makes manipulation easier. The cautery irons are ordinary soldering irons with cone shaped tips graduated in size and can be bought at any hardware store. They are heated over an ordinary gas burner. A somewhat more convenient though not more effective apparatus consists in an electro-cautery controlled by a rheostat. It possesses the advantage that the degree of heat used can be controlled to a nicety and does not necessitate the interruption of reheating the tips.

The technic of the operation is not difficult. In order to control properly the application of the cautery the abdomen is opened by the assistant by an incision just large enough to allow of thorough pelvic palpation. A moderate Trendelenberg position allows the intestines to gravitate out of the pelvis. The operator applies the cautery through the water cooled speculum from below, guided by the hand of the assistant through the abdominal incision. In this manner the operation is continued until the uterus and any involvement at the bases of the broad ligaments are thoroughly cauterized. The guidance of the cautery by the abdominal hand is a very important part of the technic as the amount of heat applied is fairly accurately estimated. The gloved hand will bear a temperature of 120-130 deg. F. but not for any length of time. The operator also has a guide as to the direction of cauterization and is warned if the surrounding tissues become too thin and rupture is imminent. Cauterization of the uterus is carried on as long as possible, the uterine wall being destroyed until but a thin shell is left. The time required for this varies between twenty-five minutes and one hour. A protection is at the same time given to the bladder and rectum that is impossible when the abdomen is not opened. The abdominal hand then permits of a far more thorough and safer application of heat than would otherwise be possible. We recommend the opening of the abdomen in all cases whose condition will permit. In cases with large vegetating masses protruding from the cervix it has been our custom to cut away as much as possible of the growth immediately before cauterization. It has been said that this encourages metastasis but it would seem that this danger is not very real if the excision be followed at once by the cautery.

The most common symptoms in our series

were foul discharge, hemorrhage and pain in the order named. Of thirteen cases with a history of marked loss of weight the loss varied from ten to fifty pounds, the average being twenty-three pounds.

We have used the method above described for the past two years and nine months in the treatment of forty-nine cases which were cauterized sixty-seven times. Of these thirty-seven were cauterized once, ten were cauterized twice, one was cauterized three times, and one was cauterized five times. The abdomen was opened in thirty-one cases and in eighteen the condition of the patient did not permit. In no case was the abdomen opened more than once. In five cases the patient's condition was so precarious that laparotomy was not done at the first cauterization; there was, however, a marked improvement permitting combined laparotomy and cautery a few weeks later.

The indication for treatment in all but one case was involvement too extensive to permit of the modern radical pan-hysterectomy. The one exception was an excessively fat patient, as we consider extreme adiposity a contra-indication to the Wertheim operation. It is interesting to note that this patient was first cauterized two years and eight months ago, returned a year and ten months later for slight bloody discharge, was again cauterized and is at present alive and symptomatically cured.

The post-operative course is usually uneventful; occasionally the temperature rises to 103 deg., there is generally little pain, it being rarely necessary to give more than one one-fourth grain dose of morphine, many cases requiring nothing. The resulting slough is much less than that occurring after the zinc chloride treatment and is practically negligible if the cautery irons are not used too hot. The marked improvement in the patient's condition is noticeable and striking, the haemoglobin increases from 10 to 25 points, there is a gain in weight, the hemorrhage, pain and foul discharge cease and by the time the patient is ready for discharge the cervix and uterus are contracted and covered with fresh scar tissue.

There are, however, two ever present dangers in the use of this method, i. e. the formation of vesico-vaginal and recto-vaginal fistulae. Percy purposely disregards both bladder and rectum and confines his attention only to the cauterization of the involvement present stating that a fistula is the lesser of two evils. In our series vesico-vaginal fistulae have occurred in four cases, two healing spontaneously by contraction of the scar tissue. A recto-vaginal

fistula occurred in one case. Whether these complications are due to the actual puncture of the bladder or rectum or to sloughing of carcinomatous tissue before cicatrization takes place, is difficult to say, but I am of the opinion that the latter is the case as the fistulae invariably appeared several days after operation and all patients had extensive involvement of the bladder or rectal walls. Familiarity with the technic both in the case of the operator and assistant will undoubtedly play a part in the avoidance of these unpleasant sequelae as is shown by the fact that our last twenty-three cases have been without complication. Complications aside from the fistulae above mentioned consisted in two moderate post-operative hemorrhages and one death from peritonitis. One death occurred while the patient was still in the hospital due to extreme carcinomatous involvement, the vagina being infiltrated to the introitus. One would think that ureteral injury might occur but as yet we have not seen it.

A few case histories picked promiscuously from the series may serve to show better the immediate benefits of the cautery treatment:

CASE 4733. Age 56.

History.—Flowing, foul discharge, pain. Loss of thirty pounds in weight.

Examination.—Cervix fixed and the seat of infiltrating mass extending into vaginal wall on all sides. Blood pressure 200.

Laparotomy.—Cautery, 45 minutes.

No discharge, hemorrhage or pain three and one-half months later.

CASE 4904. Age 40.

History.—Excessive bleeding, foul discharge.

Examination.—Large friable infiltrating mass filling whole vagina. Very foul discharge.

At first operation abdomen was not opened but mass was cauterized as well as possible from below. Two weeks later laparotomy and cautery was done for 45 minutes. Patient returned in three and one-half months with large recurrence and dangerous hemorrhage. Haemoglobin 23. Cauterization only long enough to control hemorrhage. In three and one-half weeks the cervix was again cauterized to destroy the large recurrent mass. Patient discharged in two weeks with no evidence of new growth. Haemoglobin 54. Two and one-half months later patient feeling much stronger, no bloody discharge.

CASE 902 (Private). Age 60.

History.—Flowing.

Examination.—Uterus involved to within one inch of top of fundus with extension into parametrium on both sides.

Laparotomy.—Cautery 40 minutes.

Returns five months later as advised. Very little recurrence. Re-cauterized. Patient alive at present, 2 years and 5 months later.

I have had time in the preparation of this

paper to collect accurate late post-operative data from the physicians of twenty-three patients. Of these eight are living and fifteen are dead. Of the fifteen cases who have died:

- 1 lived 1 year 7 months.
- 1 lived 11 months.
- 1 lived 10 months.
- 8 lived 4 to 8 months.
- 4 lived less than 4 months.

Of the eight cases living:

- 1 living 2 years 8 months after cauterization, "symptomatically cured."
- 1 living 2 years 5 months after cauterization.
- 1 living 2 years 3 months after cauterization, "in good condition, vesico vaginal fistula which healed."
- 1 living 2 years 3 months after cauterization, "farmer's wife, doing all her own work."
- 1 living 1 year 8 months after cauterization.
- 1 living 1 year 4 months after cauterization, "vesico vaginal fistula which healed."
- 1 living 1 year 2 months after cauterization, "slight bloody discharge at times."
- 1 living 7 months after cauterization, "in good health."

From an analysis of our entire series we feel justified in concluding that from 90 to 92 per cent. of our cases were primarily benefitted, two vesico-vaginal and one recto-vaginal fistulae failing to heal and one patient dying of peritonitis. The improvement in all cases was primarily a cessation or abatement of the most prominent symptoms, viz. foul discharge, hemorrhage and pain, with a corresponding improvement in the general condition of the patient. In the case of the one fatality, in which the abdomen was opened, I feel certain that we were mistaken in surgical judgment, as the case had had rises of temperature before operation as high as 102 deg. It would have been better in this case to have cauterized from below and to have opened the abdomen and recauterized later as the condition improved and the infection cleared up. In the last twenty-three cases of our series primary improvement followed without exception. While considering primary improvement after the cautery treatment it is to be remembered that the limitation and destruction of secondary infection in the carcinomatous mass plays quite as much part in the improvement in pain and foul discharge as the actual destruction of cancerous tissue. It should also be borne in mind that many cases whose condition will not permit laparotomy at the first sitting are so much improved by unguided cautery from below that the abdomen may be opened and a thorough and intelligent cauterization done later. We have found that recauterization may be done several times if necessary with benefit to the patient.

In regard to the end results, we realize that we have no means of estimating how long and how comfortably these patients would have lived without the cautery treatment. However, when we consider that eight of twenty-three patients, all with far advanced carcinoma of the cervix, are living and apparently in good health over periods of from seven months to two years and eight months, and that of fifteen dead, eleven lived from four months to one year and eleven months we cannot but conclude that life is materially lengthened. In six of eight cases who lived longer than one year after operation the operator was guided by the abdominal hand showing the value of laparotomy where permissible, to allow of more thorough application of the heat. The five years without recurrence usually given as a cure in post-operative cancer of the uterus has not elapsed in any of our cases so that the number of cured cases cannot be estimated. It is our opinion that the great majority of cases even though life be prolonged for varying periods will ultimately die of cancer. We do not believe with Percy that metastases in the distant pelvic glands are destroyed as it is our experience that the radiation of heat is not sufficient to reach them. We do think, however, that symptoms are greatly benefitted or cured and that life is prolonged and made comfortable.

In conclusion do not be mistaken by inferring that we advise the treatment herein outlined in all cases of carcinoma of the uterus as the modern radical pan-hysterectomy as described by Wertheim has a distinct indication in the treatment of operable, which is synonymous with early, carcinoma of the cervix. The cautery method should be used simply as a preliminary procedure to the radical operation in early cases, or reserved for the late, hopeless and otherwise inoperable conditions as an efficient palliative treatment.

Kresge Building, Detroit.

DISCUSSION.

DR. J. W. VAUGHAN, Detroit: This is too valuable a paper to let go over without discussion. There is no doubt the doctor in his method of application of low heat has added very much to our method of making these inoperable cases more comfortable. It is a palliative method, however, and when we come to draw conclusions as to whether a case of carcinoma is benefitted, whether life is prolonged from such method of treatment, we get into deep water. We know that a woman will have a carcinoma of the breast, I know of one woman with adeno-carcinoma of the breast who lived for twelve to fifteen years without any rapidity in growth. We all know that in other women we will have an apparently similar type of adeno-carcinoma of the breast and within six months it is all over. Now, we have those same types in carcinoma, particularly of the cervix. The adeno-carcinoma of the fundus, of course, is a less rapid type usually, but when we come to draw conclusions from any large number of cases, as to whether life is prolonged or not, we come in error, because in each different case malignancy or rapidity of growth

is dependent upon the whole bodily resistance of the patient to cancerous growth.

Recently Murphy, of the Rockefeller Institute, has shown in his animal studies and experiments, that in bodies malignant growths are formed by molecular leucocytes. This corroborates work that was done in our laboratory and published in 1910, in which we showed definitely that rapidity of growth, whether recurrence will take place or not, is dependent upon the patient's own resistance, which is furnished from the large amount of phagocytes. I think in that one point we will have to be very guarded as to drawing any conclusions as to whether we have prolonged life by this method. Certainly, any method in these inoperable cases that will reduce the foul discharge that is so disagreeable to the patient, that will relieve pain without the use of opiates, that will control hemorrhage, should be used to the utmost.

DR. WHEELOCK: Just a word in regard to carcinoma. I know that up to within a very few years ago it was thought by most of us that a case of carcinoma of the cervix, in particular, was certainly doomed. Some of us were very much interested last year, in our visit to London, to get the percentages of cures and the lines of treatment that were used in hospitals there. I remember a very profitable and interesting day that we spent with Dr. Herbert Spencer, in which he gave us some valuable statistics. He had a large laboratory room in which he had about 100 specimens under the microscope, and a gross of specimens in jars, of cervixes that he had removed from six to twenty-three years previously—all of them, he had taken no recent cases—for our inspection that morning, and these were the figures that he gave with reference to his work. There were about 40 per cent. of cases that came to him, of the cervix, which he did nothing for, because his method was high amputation, and of the other 60 per cent. were recoveries, that made his total statistics 39 per cent. of cures—39 per cent. cures by high amputation of all cases that came to his office. It was rather surprising to us, and he gave the history of two cases that were pregnant at the time, went through delivery, and one of them was present that morning that had been delivered through a carcinomatous cervix twenty-three years previous, in good health, and, of course, had been a cure. This amputation was made after the confinement, so that the high amputation is offering us statistics that compare, it seems to me, very favorably with the Percy method.

In one point Dr. Percy did not agree, either I must have misunderstood him or the reader of this paper, with reference to the extent of carbonization that he recommended, because, as I remember it, he advised very strongly against the use of a degree of heat that produced any amount of real carbonization, he said it was not as effective as the method used and advocated by the reader of this paper, as I understood from this paper there was a little difference of method between the use of it in Ann Arbor, and recommended by Dr. Percy; but I am very certain in his London paper he advocated the low heat, just as advocated by this paper this morning.

DR. DAVIS, Detroit: It seems to me that any method that tends to destroy the quantity of supply of cancerous cell should appeal to us, provided that the process does not stimulate future, more rapid growth. In studying a number of these cases microscopically, the picture is something like this: A very fair line of demarcation is seen of the sloughing tissue, and for some few millimeters beyond this line of demarcation the cancerous cells are seen in a state of collateral disintegration; so also is the stroma. It does seem that to have the cancerous cells in the stroma cut off for a certain distance beyond the line of demarcation of sloughing tissue, there would be no future growth of the cancer. However, in so many of these cases the parts, or some of the deeper cancer cells are not touched, and the question is whether, after the process has ceased, the tissues have contracted, whether there is not a more rapid growth from these deeper cells. It is very common to notice the source of the metastases of these case go on and rapidly increase, possibly from the lower resistance of the patient. I think Dr. Vaughan has made a good point in regard to that, not from the cells that are close to the source of the cauterization, but those that are more distant, they take on increased growth because of the lower resistance of the patient.

DR. JACOBSON, Toledo: Just a word in regard to this subject. Together with many of the other physicians of the country I made a pilgrimage to Galesburg and saw Dr. Percy using his method, and since then have used it somewhat extensively. I want to emphasize first the point brought out by Dr. Vaughan, and that is the relative malignancy of the various forms of cancer. I do not know why there should be so much division on this point of cancerous growths. When we go into the pathology of it we find that cancers are divided into three kinds, and any discussion of cancer must be given with

that in view. As to the relative forms of malignancy, we have first the least malignant of all—I think Dr. Vaughan misquoted—and that is the form of cancer that is fungus in its nature; the fungus is the least malignant of all forms of cancer. In that type you can do an ordinary hysterectomy and get 75 per cent. cure. That is a clinical fact, borne out by any one who has done a large amount of work in connection with cancer of the uterus. The other extreme, cancer of the cervical canal, that is the most malignant, and it is that type of cancer with which almost all our methods are failures, I don't care what it is. Between those extremes is the cancer that originates on the vaginal portion of the cervix; those are the cases which are burned, and which every surgeon would cauterize and get results that would last from two, to three or four or five years, or with your high amputation perhaps cure the case.

I had occasion two or three years ago to go through the whole subject of cancer, and I went over Byrne's work very closely, and I want to emphasize the work and his results were not confirmed by microscopic investigation, and there was no distinction made between the various forms of cancer. We must bear in mind the relative degree of malignancy of cancers situated in different parts of the uterus. We must get that straight. I think the greatest problem we have to confront is early diagnosis. In this country we have a very small percentage coming under operation.

So much then, for the relative degree of malignancy and the type of operation. I think any surgeon of large experience will tell you that he has cases of cancer of the vaginal part of the cervix that will yield to the old method of cauterization and thoroughly drying. Those are not cancers of the cervical canal.

Now, as to the Percy method of treatment, I think Percy has given us a new form, absolutely new, not mentioned, I think, in the paper, or else I did not hear that, and, by the way, I want to emphasize this fact, that when we speak of the Percy method as the cautery method, you are doing the method an injustice. At the time of our visit at Galesburg we were correcting Percy all the time himself, he got into the habit of calling it the cautery method. It is a heat method of destruction of carcinoma, based on experiments made in Detroit. It is simply thorough heating of these tissues which destroys the carcinoma cells. Percy was the first to open the vaginal method of treatment, and he has demonstrated this all-important fact, which you cannot get in any other type of operation, or form of treatment, and that is this—if the doctor mentioned it in his paper I missed it—that is, that you can take a large percentage of these fixed uteri, that are absolutely fixed in the pelvis, and with the assistant's hand in the abdomen over the fundus, and with the constant application of heat, and it is a very slow method, takes an hour or two hours to do it thoroughly, everything in that pelvis can be made loose, so that it can be moved. That is the one fact that Percy has demonstrated, the most important fact in the whole treatment. That is what I want to emphasize here today, that with this method of treatment we have a new agent whereby we can take these fixed uteri and loosen them up.

DR. J. H. CARSTENS, Detroit: Really, I have nothing to say at all. We might discuss cancer and cancerous growths and other things for hours and hours and get no further than probably we are now. There have been a few points brought out that are worthy of attention. The power of the resistance of a patient to infection of cancer or the growth of cancer is perfectly marvelous in some cases, and we have all seen it.

The object of the paper, as I look at it, is that we should not let these patients alone, but try to help them all the time, and that is what makes me tired when I come across cases where the patient has cancer and they say, "O, well, cancer, you cannot do anything, just let them alone, give them morphine." There are cases where you have to do that and not do anything else, but in cases of cancer of the uterus certainly you can do a great deal, and Dr. Seeley's paper simply was a plea and shows you one method of doing something for these patients, instead of letting them suffer and have the discharge and odor and disagreeableness for the whole family. The paper was simply a plea to try to do something until the patient is buried six feet under the ground, and that is the reason I think the paper is valuable.

DR. SEELEY: I realize that the degree of malignancy in carcinoma of the uterus varies greatly. As Dr. Jacobson has said, adeno-carcinoma of the fundus is relatively the least malignant. Our pathologic reports in these cases, according to our pathologist, differ. He can make an estimate of the degree of malignancy. In almost all these cases he has reported very malignant, rapidly growing, carcinoma of the cervix.

We have used this method in no case in which other operative procedures could have been done. Each and every one

of these cases were very far advanced, many of them entering the hospital on a stretcher to have the operation performed.

In regard to Dr. Jacobson's statement about the loosening of the uterus, I mentioned that in my paper, but not exactly in the same words that he used. We cauterize, of course, thoroughly, the tissue on both sides of the growth, and this is followed by a softening and loosening, just as he says, of the uterus and parametrium, and the carcinoma is greatly softened.

As to Dr. Wheelock's statement in regard to high amputation of the cervix, I am very doubtful in regard to this being a cure for cancer. I grant in a very few early cases a high amputation might be sufficient, but in the majority of operable carcinoma of the uterus the only hope you can give the patient for a cure is the radical operation.

In conclusion, I agree exactly with what Dr. Carstens has said. I am offering this method for your consideration simply as a palliative treatment. I have called it the cautery method, because that is what it was originally called by Percy when he demonstrated it to us in Ann Arbor, and I thought it might be confusing to call it something else.

In regard to the degree of heat, when Dr. Percy first originated this method, he advocated that the heat be used a dull, cherry red, in his later work, however, simply hot enough to cause a distinct simmering.

RELATION OF LOCALIZED HEADACHES AND SOME ORGANIC EYE LESIONS TO INTRANASAL ACCESSORY SINUS DISEASES.

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DETROIT, MICH.

Two years ago I presented to this Section a paper dealing with the subject of ocular disorders as symptoms of systemic disease, in which I called attention to the importance of systemic autointoxications of remote disorders as causative factors in ocular disturbances. In that paper, however, I anticipated largely cases of whatever origin as becoming cases of vascular intoxication, many of which had their origin in gastrointestinal disturbances or disturbances of the kidney, or maybe in the physiology of the ovarian function, etc. At this time I want to refer to a class or classes of cases referably wholly to the domain of the rhinologist. I refer to ocular disturbances due to intranasal disease and disease of the nasal accessory sinuses. I shall not attempt any detailed review of the anatomical relations of the nasal accessory sinus structure to the orbital cavity.

The readiness of infection of the palpebral sac from intranasal disease by way of the lachrymal duct needs no mention, but I shall consider two other classes of cases, first, acute and chronic suppurative conditions of the nasal accessory sinuses. Some disclaim that the close relation of the sinuses to the orbital cavity is the constant or almost constant cause for grave disease of the optic nerve, associated with disease of the accessory sinuses, but rather that final intraocular lesion, especially optic atrophy and retrobulbar neuritis, appears in these cases

as a general vascular intoxication. I think, the consensus of opinion of those of largest experience is that these two serious conditions, associated with sinusitis and ethmoiditis, are dependent upon pressure of exudate, either by direct exudate pressure or distended sinus walls, or local extension of infection or new growth, and I think it cannot be denied that cases of optic atrophy are certainly dependent upon pressure in extensive posterior ethmoiditis, in spite of the fact of a left optic atrophy accompanying a right ethmoiditis, though one should have constantly in mind the possibility of a remote toxemia.

The important group, however, of ocular symptoms due to accessory sinus disease is made up of those cases of optic neuritis, neuroretinitis and thrombosis without external signs of orbital inflammation, and in these cases the greatest care is necessary for determining the location of the source of infection. De Schweinitz refers to Onodi's investigations, showing the close relation of the posterior ethmoid from the thinness of the intervening walls and assumes that this renders optic nerve involvement easier from this source even than by way of the sphenoid.

On August 27, 1913, M. S., a merchant, aged 50, presented himself on account of dimness of vision which had been steadily progressing for about seven years, during which time the man had had many attempts at betterment by glasses and ocular therapeutics.

His vision at this time = O. S. 2/200, his ophthalmoscopic examination showed temporal half of right disc much atrophied and whole of left. His left field was contracted to a small point disproportionate to his right, in relation to the difference of vision. When the man entered my office I was struck by the marked signs in his phonation of nasal obstruction, and on examining his nose found his right middle meatus literally stuffed with polypoid growth to such a degree that his septum was pushed firmly against his left middle turbinate. At several sittings I removed eleven or twelve polyps of varying size, and did some curetting of his posterior ethmoid mass, but was timid about going farther fearing I might spoil what little vision he had. Following operation I gave the man K. I. and daily pneumo-massage. On October 6, 1913, two months after removal of polyps, his vision = O. D. 20/120 and O. S. 6/200. From that time until he disappeared, about a year and a half following, there was little variation in his vision. During last month I had a note from Jarenky, of New York, saying the man had come to him with vision of right eye reduced to 6/200, also saying that the radiograph was negative, also Wassermann, which latter I had found. I suspect, however, that he had recurrence of polyps with increased pressure on his right, though Jarenky did not mention anything of the man's intranasal or sinus condition. This man, however, is a pipe smoker, and while he disclaimed excess, nicotine poisoning may have had some in-

fluence upon his optic atrophy. I have not had much experience with phlegmanous extension into the orbit, and only report here one case following extreme acute pan-sinusitis suppurative.

This case, referred by Dr. Dayton Parker, Jr., had had a week previously a partial middle turbinectomy; when we operated upon the man he had enormous pan-sinusitis of the right side, with phlegmon of the right orbit and considerable ptosis of his right eye. I performed a Killan operation. At the time of operation patient was much prostrated and we feared meningeal involvement. He had no vision of the right eye at the time of operation. After recovery from operation patient's fundus examination revealed embolism of central artery with complete obliteration.

One important fact, leaving little doubt of the relation of the accessory sinus disease and intranasal disease to optic and retrobulbar disturbance, is the brilliant results obtained by sinus and intranasal surgery, and if there is any department of surgery which will not bear temporizing, it is that of the accessory sinuses and the nasal cavity, and it is imperative that one should know his topography well so that he may fearlessly and accurately attack the remotest area involved in the disease he is treating.

In the second class of cases I refer to those coming frequently to the ophthalmologist for the relief of frontal and orbital headache, by the way of refraction correction.

In many of these I find errors of refraction of little or no importance; they are more often young adults from eighteen to thirty; in many of these if one finds refraction error one will find it out of proportion to the symptoms.

Radiography often reveals nothing. One will not find pus in the anterior portion of the hyatus semilunaris to indicate antrum disease, nor in the posterior portion to indicate posterior ethmoid disease, but one will find, on inspection, often a very narrow middle meatus. Sometimes on account of large, turgescient, intensely red middle turbinate, which of itself fills up the middle meatus, obstructing drainage.

Sometimes a high septal deflection is to be found impinging upon the middle turbinate, causing pressure swelling.

Oftentimes these cases have much irritation of the so-called sensitive area, with sneezing, frequent head colds and conjunctivitis of greater or less degree.

Stucky, in a commendable terse paper, presented to the American Academy, 1913, refers to numerous cases of amblyopia due to obstruction of the sphenoid cell and frontal sinus drainage, and reports good results from the simple operation of partial or more complete middle turbinectomy. I believe that many of

these cases are but cases of negative pressure with resultant neurastasis obstructing free ventilation and normal drainage, and I think that in many of these, with pressure from high septal deflection, a complete careful resection of the deflection would accomplish relief of pressure and would be preferable in many instances by conserving healthy turbinate surface.

Of one thing I am convinced, that many of this latter class coming to us for correction and oft-repeated correction of refraction, deserve in many instances more careful examination for obstruction of middle and superior meati for the relief of trying frontal and orbital pains.

DISCUSSION.

DR. DON M. CAMPBELL, Detroit: The subject of the influence of intranasal disease on ocular conditions is a pertinent one, and one of great interest. We perhaps have not a very clear idea of the various intranasal conditions that may produce symptoms about the eye. The pressure conditions in the intranasal cavity are very important in this connection. Pressure of the turbinal against the septum will undoubtedly produce asthenopic symptoms that are indistinguishable from the same class of asthenopic symptoms that come from errors of refraction or imbalance of the ocular muscles.

There is one class of cases that is very trying to the ophthalmologist, namely, those patients coming with asthenopic symptoms, with a low grade of astigmatism, perhaps some imbalance of the ocular muscle, with heterophoria, which conditions are carefully corrected. In two or three weeks or a month the patient comes back, and we see again that the ocular imbalance is changed. There is a different type or degree of phoria, which has developed during those few weeks, and a difference in the astigmatism. It is noticeable that in these cases coming from some intranasal pressure the axis of astigmatism will change very materially, sometimes in one direction and sometime in the other, so that it is impossible to fix the point of the axis of the cylinder correctly permanently. I have seen quite a number of such cases that have been permanently relieved by relief of the intranasal pressure.

The next class of cases of which I wish to speak are those that are due to various grades of sepsis in the nose. This is a complex of symptoms, to which Sluder has recently drawn very particular attention in connection with the influence that the sepsis may have upon the various nerve trunks entering the apex of the orbit, and those coming through the anterior foramen, such as the various kinds of neuralgias, pain, disturbance of balance of the ocular muscles, and another curious and interesting symptom, namely, a disturbance in the pupillary condition, sometimes found in connection with these various forms of symptoms in the accessory sinuses of the nose. Then, there is that class of pathology in the nose that goes a little further, where there is an actual septic condition, an accumulation of pus in the accessory sinuses of the nose. This, of course, is likely to produce graver conditions in the organ in contact, maybe an ocular neuritis, followed by an atrophy, choroidal changes, changes in the middle coat of the eyeball, or any other trophic condition that may be found in the ocular tissues.

There is another feature of this subject that is very interesting, and that is that these cases of intranasal sepsis (and this remark also applies to toxemic and septic conditions arising from the whole upper air tract, the tonsils, the nasopharyngeal space, the intranasal cavity and accessory sinuses) may sometimes produce a graver intraocular condition. Such a case occurred recently under my observation. This patient was suffering from toxemia from the tonsils and from a septic condition within the nose. There was a general septicemia, a septic endocarditis developed, and as a result of that an embolism was thrown off into the circulation, which plugged the central retinal artery. That seems to be rather a round-about way, but it does occur sometimes, and shows that the subject of intranasal sepsis has a tremendously wide application, and one which should certainly interest the ophthalmologist to a very great extent.

There are very many other aspects of this subject that are

interesting, but these, I think, will probably give an idea of the principal ones at least.

DR. W. R. PARKER, Detroit: In looking over the literature of this subject, as to eye symptoms secondary to accessory sinus disease, one gets a very false idea. Anatomically, the conditions are ideal for a frequent disturbance, but, practically, on careful analysis, it happens very exceptionally. In my own experience, I have never seen a case of optic atrophy that I have been able to attribute to causes in the accessory sinuses. That it does occasionally occur there can be no doubt, but the coincident retrobulbar neuritis, with polypt, is not enough evidence to make it an etiologic factor, it seems to me. I think too careful examination, in regard to these conditions, of the nose and sinuses cannot be made, and that the rhinologist ought to see all these cases, if the man who is doing the eye work is not competent to make a nose examination, but my personal experience, and the nose examinations are not mine, is that we have been looking for years to try to hook up one of these cases that we could be clear on, but have not been able to do it with any degree of satisfaction. They do occur, as reported by Dr. Livingstone, but I do not think it is clear.

Dr. Campbell's point, I think, is one of the most important. We do know that we see the least eye symptoms in the worst accessory sinus cases. We see eye involvement in the chronic cases, though, of long-standing, and I am inclined to think that it is more of a general toxemia, with a retrobulbar manifestation, than it is due to the proximity of the eye to the accessory sinuses.

There is one other point I would like to mention, and that is with reference to the question of general diseases, especially multiple sclerosis. We are overlooking cases of multiple sclerosis, I think, quite frequently. Cases of transitory blindness; cases even with quite a swelling of the head of the nerve; cases of so-called retrobulbar atrophy are not infrequently produced by the general diseases of multiple sclerosis, and if one has it in mind and is on his guard constantly he will be surprised how frequently he will run across a case of multiple sclerosis that comes first for an eye examination.

DR. R. B. CANFIELD, Ann Arbor: I agree heartily with what Dr. Parker has said. While we have been able to find only a very remote relationship, etiologically, between diseases of the accessory sinuses and diseases of the fundus of the eye, we began the work on this subject expecting to find a large proportion of cases so associated. Supported by the work of Loeb, who has some very beautiful anatomical specimens showing the anatomical relationship between the sinuses and the optic nerve, we felt quite confident that we would be able to make some very interesting observations, but we were disappointed. I was disappointed, because I felt that the rhinologist had an interest in these fundus diseases, and I still think he has, but although the optic nerve itself is in very intimate relationship in some skulls with the posterior ethmoid and sphenoid, we find in those skulls in which an X-ray picture seems to show such an intimate relationship, absolutely nothing in the nose to support any belief that a nose condition may be important in establishing the eye disease. I have just been consulted in a case of that sort, in which a toxic neuro-retinitis was supposed to be possible due to an accessory sinus disease, although observation of the patient for some time had been unable to demonstrate any such thing. This was supposed to be the case, because all of the other possible causes had been eliminated, and yet in this case nothing was found in the nose. In such cases, where other factors have not been discovered, it has been too often the custom to do some surgical interference in the nose, the result of which is that healthy accessory sinuses have been opened, slightly turgid middle turbinates have been removed, and other operative procedures have been indulged in, with the result that the patient has been more uncomfortable than before, and not securing any relief from his eye condition. I deprecate the removal of the middle turbinate unless a very definite reason can be seen for doing such an operation. I deprecate very strongly the radical interference with the ethmoid unless some disease can be demonstrated in the ethmoid. It is easy to see whether the ethmoid is diseased or not by very conservatively opening one cell and then the other, in such a way as to permit this opening to close if nothing is discovered, that I feel that certainly no cribriform plate should be exposed to air currents and infection. It is a very satisfactory thing to operate radically upon a diseased ethmoid, but I believe that when the normal ethmoid is opened radically the patient is very likely to suffer discomfort for the rest of his life.

Some few years ago the subject of the relationship between the sinuses and the eye was so enthusiastically received that a very great many people were operated upon, and although that wave of enthusiasm has receded somewhat, I still see cases where the middle turbinates have been removed and the

ethmoids taken out who are still very uncomfortable, and have much more headache than before, and whose eyes are not improved.

Without meaning to state that I think there is no relationship and that certain cases of fundus disease do not depend on the accessory sinus disease, I think these cases must be rare. I think it would be a good plan always to study very carefully the anatomical conformation of the base of the skull. A Frenchman, whose name has slipped my mind for the moment, has seemed to prove that in certain skulls the bases are of such shape that they do not bring about pressure congestion and predispose to optic nerve congestion and other affections. We should look very carefully into the condition of the sphenoid and the shape of the sella turcica before we go to work radically to destroy useful mucous membrane. In this connection, however, one may operate very nicely upon the septum without doing the patient any harm, and so get rid of any point of contact between the middle turbinate and the septum, possibly break off the middle turbinate, so as to facilitate drainage, although I am not at all sure that there is very much drainage from the accessory sinuses. The very nature of the formation of the mucous membrane leads one to think that there is very little drainage from the accessory sinuses, normally. However, the nasal mucous membrane will drain several pints of fluid during the course of a day. The mucous membrane lining the frontal sinuses, superficial and deep, and the ethmoids is almost a periosteum, and the secretion from it is minimum.

DR. J. E. GLEASON, Detroit: Just one more feature that has not been mentioned in either paper or discussion, that comes up occasionally, namely, the condition of the frontal sinus that causes symptoms on the part of the orbit. There have been two cases under my observation in the last four or five years. The patients presented all of the symptoms of an orbital tumor. In one case these symptoms were so pronounced that, in the absence of any conclusive X-ray findings, or any symptoms in the nose, the surgeon in charge operated and found, instead of a tumor of the orbit, a ruptured mucocele in the frontal sinus. Another case was one of mucocele which broke through the lower plate of the sinus and came out through the upper lid. In both of these cases the X-ray failed to help in any way to show necrosis of the floor of the sinus, and also there was no evidence on the part of the middle meatus. These cases may be somewhat rare, but I have had two.

DR. A. E. BULSON, Jackson: Dr. Canfield has covered the ground very thoroughly in regard to reflexes in the nose. I think we are negligent many times when a patient comes with headache. We immediately examine him for astigmatism, or hyperopia, or something along that line, when, if we would be more thorough in our examination, we would find that the reflexes were practically from nasal origin. I remember very distinctly such a case that came to me some years ago from a distance. This patient complained of intolerable paroxysmal headaches. He was also having considerable nasal obstruction. He had some infectious condition of the nose, with discharge, and had been treated for this condition at various places. He had consulted a good many physicians, one of whom had suggested the possibility of malignancy, causing the man a great deal of worry. I made my investigation and took his vision. He had marked astigmatism, paroxysmal headache, insomnia, and a discharge from the nose. There was a fungoid growth extending up into the sphenoid cavity, and as I enlarged that I extended my probe further and struck a hard substance, which I found to be movable. I thought it was a necrosed bone. I took the forceps, extended well up into the sinus and extracted an incisor tooth. I held it up and said, "That is a great place for an incisor tooth." "There," he said, "that is a tooth that was kicked out twenty-two years ago by a horse." This man had been kicked in the mouth, two teeth were lost, one found, and he thought he had swallowed the other. That, of course, cleared up the diagnosis in this case. I felt, of course, that I had cause to congratulate myself for finding the cause of the trouble. After removing the tooth, disinfection, and other treatment, the astigmatism cleared up.

Dr. Campbell mentioned the change of meridian in astigmatism. I think that is characteristic of nasal disturbance, and I have found to my own chagrin that many times I have corrected a case, and in two or three weeks that patient would come back with the meridian changed. That showed a lack of proper examination, I thought. I call to mind one case especially, where there was an infected septum and enlarged turbinal. After the operation of resection the whole condition seemed to clear up and a normal state followed.

I am well pleased with the discussion that has come out, because I think it is very important. As I have said before, and wish to repeat for sake of emphasis, our investigation

should be thorough and complete in all cases, especially young people, who come for refraction.

DR. E. J. BERNSTEIN, Kalamazoo: I am very glad to note the conservative tone of this discussion. I don't doubt that such things are possible, but it seems to me that when we find a retrobulbar neuritis and sinus trouble, if we will clear up the sinus trouble the retrobulbar trouble will disappear. It would be very hard to convince me that we had not found the cause of the trouble.

With regard to the question of the change of the axis in astigmatism, I think that is a very common experience, and is an experience that comes to me in my later experience that makes me more indulgent in my criticism of others. I think most of us have been prone to criticize the work of other men when we find variation in the axis of the cylinder in astigmatism correction, and think the other man has done wrong. As we grow older, we find that we have made the same blunder, which is not a blunder, but conditions have changed.

Dr. Livingstone made mention of the fact that recession of visual acuity was possibly due to the fact that the man was a smoker. I do think it is about time for us to be a little more exact in making such statements. Some time ago a little discussion was had at the Southwestern Triological Association about the prevalence of tobacco and myopia. I very much startled my friends by saying that I thought cases of myopia caused by tobacco were extremely rare, and that I had never seen a case—or more than one—and I doubted very much if any others had seen many either. I was pooh-poohed and laughed at, but I took great pains after this meeting to write to a great number of men, and almost to a man this position was sustained. I think we ought to be very cautious about making such assertions, and we ought to be fully sure of our ground before we make such statements. Doubtless, tobacco amblyopia does occur sometimes, and, of course, to some tobacco is a poison.

DR. E. A. BULSON, Jackson: I am the man who brought the subject up before the Triological Association. At that time the Doctor said there was no such thing as tobacco amblyopia.

DR. BERNSTEIN: I said it was very rare.

DR. BULSON: I have compiled such cases, both from my own experience and that of others. One case especially comes to my mind now, of a man of thirty-five, who came to me with glasses. I found that further investigation was needed. I asked him if he was a tobacco user. He said yes; that he smoked ten or fifteen strong cigars a day. He was told that it was up to him to save his vision and quit tobacco, or go on smoking and go blind. He said he would rather be blind, but he quit smoking, and in six months' time he had normal vision.

Dr. Bernstein says he has found from correspondence all over this country that the condition is very rare. I want to say that I have a stack of evidence from the best men in this country along the same line, and every one of them says that there is a tobacco amblyopia. In many cases it is caused by a combination of alcohol and tobacco. Tobacco amblyopia is typical and characteristic. The evidence of this is that if the patient discontinues the use of nicotine the condition gets well.

DR. B. R. SHURLY, Detroit (closing the discussion for Dr. Livingstone): My views are absolutely those which have been expressed very clearly and definitely by Dr. Parker and Dr. Canfield. For many years, especially since my return from a meeting of the American Medical Association, where Dr. Loeb went very minutely into the subject of the anatomy of the septum in relation to the orbit, I have been endeavoring to find these cases. It would seem, from the work done by Dr. Loeb, that it must be that we were missing a great many of these cases, and not sufficiently understanding the relationship, but in point of fact they are extremely few, and many of them I have found, just as Dr. Canfield says, where the septum resection will bring about all the relief that is necessary for that individual. I think this is a very highly valuable procedure. In many of these cases there is a deflection in the immediate region of the middle turbinate, and the relief obtained by its correction, without any loss of the turbinate or mucous membrane, to my mind is exceedingly satisfactory, and it seems to me that this procedure, at least as a first attempt to relieve the condition, is a very good one.

VINCENT'S ANGINA.*

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HISTORICAL.

Vincent's angina as a clinical entity was first described by Vincent in 1898. Earlier work leading to this conclusion had been done by himself and others. In literature and practice, cases which were probably due to infection with the bacillus fusiformis and the spirillum were variously named. Such diagnoses included certain cases of noma, gangrenous stomatitis, pseudo-diphtheria, ulcerous angina, cancrum oris and ulceration ascribed to scurvy.

In 1879, Clark (1) described a curved and motile bacillus which may have been the fusiform bacillus.

Rauchfus (2), in 1893, described the specific organisms as occurring in ulcero-membranous angina, in children in a St. Petersburg Hospital. In this same year Babes (3) found the same organism in the gums in cases of scurvy.

Plaut (4) reported five cases of ulcerative angina in 1894 and described the occurrence of the associated specific organisms, the fusiform bacillus and spirillum in ulcero-membranous angina and scurvy and referred to still earlier work by Miller in 1883.

In 1896, Vincent described cases of hospital gangrene associated with the spirillum and fusiform bacillus and stated also that they were found in ulcerous angina. He reported fourteen more cases of angina in 1898. In this study he first established the fact of its being a distinct affection (5).

The next year Bernheim (6) reported thirty cases of angina and stomatitis.

In America, Emil Mayer (7) first called attention to Vincent's work, reviewing it in 1901. The first American case was also described by Mayer in 1902, in the *Journal of American Medical Sciences*. In 1903, Fisher described two cases in the same *Journal* and in July, 1904, Crandall reported a case in the *Journal of the American Medical Association*. Following this, cases were reported by Berkeley (8), Holm (6), Arrowmith (9), Oertel (10), Halsted (11) and others.

INCIDENCE.

There is no doubt that a large number of cases of Vincent's angina go undiagnosed, nevertheless, it is not a common disease.

From 1905-1912 inclusive, 4704 cases of

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diphtheria were admitted to the Grove Hospital (12) and another 809 cases certified to be suffering from diphtheria were found after admission to have other forms of sore throat. Among the latter were forty-one cases of Vincent's angina, so that it occurred in 0.7 per cent. of all cases of sore throat and in 5.05 per cent. of non-diphtheritic angina.

Rolleston (13) also reports that ninety-five cases or 0.5 per cent. of 18187 cases received at the Metropolitan Asylum Board Hospital (London) in three years (1905-7) as suspected diphtheria, were found to be Vincent's Angina.

In the examination by Rice (14) of 1352 routine throat swabs, ten were bacteriologically and clinically Vincent's angina. Twelve other cases showed either the bacillus or spirillum alone. None of these were clinically Vincent's angina.

ETIOLOGY.

Vincent's angina may occur epidemically in children's hospitals. Outside of hospitals it is more frequent in young adults.

It usually appears in children suffering from some form of malnutrition. It follows or complicates some cases of measles, scarlet fever, whooping cough and diphtheria. It may spread through a ward of a children's hospital by contagion. Green (15) mentions such a case due to the use of a common spoon in feeding several children, and another where apparently the dust of nursery house-cleaning carried the infection. In spite of these cases it is probably only feebly contagious.

Hamill (13) reports the case of a physician who was infected by a sick child coughing in his face. Chamberlain (13) reports a case of cutaneous infection due to a bite by an infected person. Hultger (13) reports another due to a patient with the angina biting his own nails.

In adults, as in children, any lowering of general vital resistance is a predisposing factor. Unsanitary environment, faulty personal hygiene and local lesions of the tonsils, gums or buccal mucosa invite the infection. The specific associated organisms are the fusiform bacillus and spirillum.

PATHOLOGY.

Vincent described two types. Rolleston claims however that these two types (the ulceromembranous, the common form and the diphtheroid type which constitutes only 2 per cent. of all cases) are merely two stages. The diphtheroid type is less intense clinically and is characterized by the presence of the fusiform bacillus,

without the spirillum and often associated with the staphylococcus or streptococcus.

The infection develops through three pathological stages. The first is that of congestion; the second following from one to several days shows the pseudomembrane formation and the last shows the breaking down of tissue with ulceration and gangrene. Amsden (16) states that the lesion is a greenish yellow slough rather than an exudate. On removal of the necrotic tissue, the denuded surface bleeds easily.

The ulcer usually affects the tonsil. The lesions may be distributed over the mucous membrane of the mouth or throat. The specific organisms have been found in mastoiditis (Yates) (17), ethmoid abscess (Brant) (17), otitis media and meningitis (Held) (17), abscess of the liver and spleen (Schmorl) (17) and cutaneous ulcers (Chamberlain) (13). The fact that the specific infection may attack so many places with such diverse clinical pictures, leads Royer (13) to hope that we may find a more comprehensive and expressive name than that used at present.

Synnott (18) reports a case implanted on the alveolar wound due to the extraction of a third molar tooth. There were also several other small ulcers on the tonsils and on the roof of the mouth. He also reports a fatal case in a child in which pyemia and multiple abscesses followed the angina. He states that the pus from the abscesses contained no micro-organisms.

Green (15) believes that cancrum oris is a neglected or aggravated Vincent's angina. He thinks that if the angina is detected and treated in time noma may always be prevented.

Larson (19) (Univ. of Minn.) was able to demonstrate the spirillum in the blood of a fatal case of noma or Vincent's angina. (Antemortem).

Chambers and Willson (13) state that some cases of pyorrhea alveolaris are regarded as due to the presence of the fusiform bacillus.

DIAGNOSIS.

Differential diagnosis must be made with lues, diphtheria, streptococcal angina and other intense infections resulting in ulceration and pseudomembranous formation. In making the diagnosis, one must resort to the study of fresh smears, cultures and the Wassermann test. Vincent's angina may be associated with diphtheria or syphilis. Certain cases are probably overlooked by failure to examine fresh smears in cases clinically diagnosed as diphtheria.

The fusiform bacillus and spirillum of Vin-

cent's do not grow on ordinary media and do not appear therefore in the culture stains (Cocks 20). Cultures are only made in serum or ascites agar under anaerobic conditions.

It is also probable that many cases of pseudo-diphtheria are Vincent's angina (21) (22).

Wherry (13) states that in the second stage where the ulcer is broken down there is no danger of confounding it with anything but lues. Vincent (13) states that secondary and tertiary syphilis may be secondarily infected with the fusiform bacillus and spirillum.

Guggenheim (23) states that he finds the bacillus fusiformis and spirillum in normal throats. Positive diagnosis he believes depends on the numbers present in the fresh smears.

Wood (24) raises the question of the effect of Vincent's spirillum on the Wasserman reaction. He points out that both the spirillum of lues and the spirillum of sleeping sickness give the positive Wassermann. He had four cases of Vincent's angina in which the Wassermann test was negative.

Meyers (25) raises the question of whether Vincent's angina is an abortive or attenuated type of lues. He does not attempt to answer.

The general symptoms are of no differential diagnostic value, being those of an acute angina. Later the ulceration, with a yellowish slough and a peculiar fetor combined with a lack of corresponding rise in temperature and pulse are suggestive. In some cases the failure of treatment to yield expected results points the way to a corrected diagnosis.

PROGNOSIS.

Children fare less well than adults. The neglected case may show extensive and extending ulceration which makes the outlook less favorable. Given a patient of fair resistance, and with early recognition the angina should clear up within two weeks. Cases of mixed infection are less favorable and much more likely to develop serious complications.

The angina is curable in the early stages but in the advanced stages, rarely (15). Some cases may prolong their course for weeks or even months.

TREATMENT.

The general measures are supportive and eliminative as would be advised in any acute angina. In hospitals isolation should be enforced. In families the usual prophylactic measures should be instituted to prevent the common use of dishes and linen. Fraley (13) and others think that the disease should be made reportable.

Locally a large number of remedies have been reported as satisfactory. Synnott (18) lists among them, 40 per cent. acetic acid solution, undiluted tincture of iron chloride, salvarsan, neo-salvarsan, methylene blue, tincture of iodine, Lugol's solution, Monsell's solution, argyrol, nitrate of silver and hydrogen peroxide. Orthoform tablets relieve the dysphagia. The use of cauterants such as carbolic acid, trichloroacetic acid and chromic acid has met with satisfactory results. The actual cautery or excision to remove the necrotic slough have been condemned by most writers.

Richardson (26) mentions in addition to the above, subacetate of copper in conjunction with peroxide of hydrogen, copper sulphate, omorol, zinc sulpho-carbolate, potassium iodide, iron and glycerin and lithium salicylate.

Stark (27) reports three severe cases where the use of sodium perborate as a mouth wash and gargle afforded prompt relief and rapid recovery.

Salvarsan may be used locally in diluted acid or alkaline solutions, the insufflation of the powder, or, as suggested by Rolleston (12) the application of the powder on a swab moistened with glycerine. It may be applied once, twice or three times daily. Its use may justly be described as simple, safe and sure.

Salvarsan may be used intravenously but Citron (12) who has tried both methods finds the direct application much more efficacious.

Amsden (12) reports a cases in which 0.6 gram of neosalvarsan given intravenously relieved the local and general symptoms and was followed by prompt healing of the ulcer.

In conjunction with the stronger local applications, mouth washes may be used of alkaline solutions, 0.5 per cent. formaldehyde, bichloride of mercury, potassium permanganate, normal salt solution, etc.

In associated diphtheria, antitoxin should be used, and in concurrent lues, salvarsan or neo-salvarsan given. Weil (13) warns against the use of mercury for lues associated with Vincent's angina before the angina is cured. Mercury tends to increase and prolong the angina. Vincent's angina may also become engrafted upon a stomatitis due to mercury (26).

During the past year we have seen seven cases which I desire to report.

CASE REPORTS.

CASE I. T. O. L. Young man 24 years old.

The patient called at my office August 21, 1914. He gave a history of occasional moderate attacks of sore throat which yielded to home treatment. The present sore throat had been bothering him for

over a week. Rather than improving under usual care it was getting more sore. He was not suffering from constitutional symptoms but the dysphagia was marked.

Examination revealed a superficial ulcer covered with a grayish yellow exudate, situated on the right anterior pillar. A clinical diagnosis of Vincent's angina was confirmed by a bacteriological examination.

The ulcer healed promptly with the use of alkaline washes and 8 per cent. silver nitrate and diluted tincture of iodine (one part to three parts alcohol). The patient was discharged in ten days.

CASE II. B. G. Young woman 19 years old.

The patient had an operation about November 20, 1914, for the removal of tuberculous glands in the left side of the neck. On December 3, she was referred for an examination of the throat before leaving for home. The mucous membrane was normal. The left half of the tongue and faucial pillars seemed slightly swollen, possibly secondary to the neck operation. On December 14 she returned complaining of a sore mouth. There were no constitutional symptoms, and not very marked dysphagia. Her principal complaint was due to the smarting of hot or seasoned foods.

Examination showed six or seven ulcers on the gums, tongue and hard palate. A clinical diagnosis of Vincent's angina was confirmed by the bacteriological examination.

The ulcers healed rapidly under the use of alkaline washes, local application of 8 per cent. silver nitrate and occasional use of 20 per cent. argyrol. The patient left for her home in eight days with the ulcers not yet completely healed. The continued use of the alkaline washes and argyrol was sufficient to clear them up.

CASE III. H. M. Young woman 24 years old.

Patient began to have sore throat on February 18, 1915. She called at the office on the 22nd. She complained of lassitude, anorexia, chilliness, very sore throat and earache. Her temperature was 101 degrees. A diagnosis was made of acute follicular tonsillitis affecting the left tonsil. Two days later there was an evident ulcer on the left tonsil and Dr. A. W. Nelson confirmed the diagnosis of Vincent's angina by reporting the fusiform bacillus spirillum in the smears.

Two days later a thin pseudo-membrane on the right tonsil seemed to indicate beginning ulceration. This entirely cleared within twenty-four hours.

Under general treatment and local applications of 8 per cent. silver nitrate and diluted tincture of iodine the patient slowly recovered. She was not completely well for six weeks.

CASE IV. E. M. A young woman 21 years old.

This patient had been associated with Case III until quarantine was established. On February 23, 1915, she called at the office with acute follicular tonsillitis. One day later when the diagnosis of Case III was made, it was suspected in this case also. A fresh smear confirmed it.

Under the same care as Case III recovery was prompt, the patient being entirely recovered in ten days.

CASE V. K. N. Young woman 21 years old.

On March 10 it was necessary to move Case III. K. N. was assigned to close the room and prepare for fumigation. Two days later she called at the office with what was apparently acute catarrhal tonsillitis. A smear was made and the bacillus fusiformis and spirillum and staphylococcus found.

Prompt local treatment was instituted. In a week the patient was well without ever developing the clinical picture of Vincent's angina.

CASE VI. L. R. Young man 29 years old.

On April 18, 1915, I was called to see the patient by Dr. J. E. Cooper who gave me the following history:

"I saw R. first on April 16. He stated that about ten days previous he had a sore throat. His case was diagnosed as tonsillitis. After a few days' office treatment he was told that he had a retrotonsillar abscess. This was opened and the patient believed no pus was found. He grew worse and was unable to leave his room. When I was called I found the right tonsil to be enlarged and apparently opened quite widely. This wound showed a suppurating surface. He had a great deal of difficulty in swallowing and his voice was husky. There was no elevation of temperature, and the pulse was normal. He was weak and without appetite. Treatment consisted in swabbing the throat every three hours with 25 per cent. argyrol, together with general measures."

When Dr. Cooper called me on the 18th, I found a greenish yellow ulcer. In addition to the above noted findings there was a marked cervical adenitis on the same side. A clinical diagnosis of Vincent's angina was sustained by the smears. The ulcer was cauterized with pure carbolic acid followed by alcohol. Only one such application was made. The former treatment was continued. A week later he was able to come to my office. The ulcer was nearly clean but still deep and not healed. The adenitis persisted. He came for treatments daily.

On April 30, I noticed a rash on his face and mentioned it. He said that for a week he had been noticing the same thing on his chest and abdomen. I referred him at once to Dr. W. F. Martin who reports as follows:

"Patient admits being exposed to venereal infection on February 3, 1915. Three days later a urethral discharge appeared. About nine weeks later the right tonsil became enlarged and ulcerated. Patient has lost twenty-five pounds. A Wassermann is positive. There is no evidence of chancre externally but one inch from the meatus the urethra shows distinct induration.

The patient was given three doses of salvarsan at one week intervals, of .4, .6 and .6 gms. respectively. Before the third dose his throat was completely well and he had returned to his work."

CASE VII. K. M. Young woman 18 years old.

The patient presented herself at the office April 19, 1915. She states that her throat began to be sore on the 16th. She worked until the evening of the 18th. Her principal complaint was inability to eat because of dysphagia.

Examination showed no local lesion. The mucosa of the pharynx and the tonsils was very red. The right tonsil was pushed forward and the anterior pillar bulged. A clinical diagnosis of retrotonsillar

abscess was made. Incision resulted in only a slight amount of bloody serum. The patient was asked to return the next day.

From past experiences with the family and inasmuch as she lived out of the city, I was not surprised not to hear from her the next day. On the 22nd, however, she was brought in to the office by her sister. At this time there was marked prostration. An examination revealed a deep ulcer on the right tonsil. The incision wound was not involved. On first glance a diagnosis of Vincent's Angina was made but was recalled when the ulcer was swabbed for a specimen. A large pseudo-membrane was removed, which uncovered a bleeding surface. The pseudo-membrane was thick and tough rather than thin and friable. A diagnosis of diphtheria was therefore made. An immediate examination by Dr. A. W. Nelson showed the Klebs Löffler's bacillus, the bacillus fusiformis and spirillum and the staphylococcus.

Her family physician, Dr. J. E. Cooper, gave the patient 6,000 units of diphtheria antitoxin and sent her on the 23rd to the detention hospital. She was discharged in just three weeks.

Dr. Cooper reports that while she was at the hospital her voice became hoarse and that it was difficult for her to talk. After her return home her voice failed until she could only whisper. Two weeks after her discharge her legs began to feel weak and she could not stand well. After being home a month she could not walk. On June 29, Dr. Cooper reported that she was recovering so as to be able to walk across the room. Her voice has also been gradually gaining until she talks nearly normally. I have not been able to examine the patient myself. Dr. Cooper states today (Sept. 2) that she has completely recovered her voice and strength.

OBSERVATIONS.

Cases I and II are of the extra tonsillar type, with prompt response to treatment and rapid recovery.

Cases III, IV and V show the possibilities of contagion and the advantage of early diagnosis and prompt therapeutic action.

In Case VI we probably had a primary luetic lesion with Vincent's angina added.

Weintz (28) reports a case of angina which dragged along for six months. There was severe dysphagia, adenitis of the submaxillary and cervical glands and a marked loss of weight (20 pounds). On swabbing the grayish superficial tonsillar ulcer clean, there was no bleeding. The fusiform bacillus and spirillum were found in the smears. Finally the ulcers healed in a week following local applications of salvarsan. After the ulcers were well, a Wassermann and Noguchi were made and were both positive. He believes the underlying pathology to have been syphilis.

Levy (29) cites a case diagnosed at first as double quinsy. After incising, bloody pus was observed. When seen by Levy a week later,

a clinical and bacteriological diagnosis of Vincent's angina was made. No spirochaeta palida were to be found. Six weeks from the onset, however, luetic skin lesions appeared. The Wassermann was positive. One injection of salvarsan cleared up the local lesion (chancre of the tonsil). He concludes that the patient was suffering from both affections at once.

Salamon (13) reports two cases of Vincent's angina in conjunction with syphilis, the latter appearing after the exudate of the angina had disappeared.

In Case VII we apparently had a concurrent infection with the Klebs Löffler's bacillus and the bacillus fusiformis and spirillum. It is probable that the loss of voice and ability to walk was due to the diphtheria toxins, though Baron (13) reports a case of Vincent's angina, in which there were no Klebs Loeffler bacilli, which lasted over three weeks and following which faucial paralysis developed with inability to swallow or to speak with distinctness. There was also difficulty in moving the arms and limbs. After electrical treatment and baths the patient recovered completely.

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THE CHOICE OF TIME FOR OPERATING IN ACUTE APPENDICITIS AND GALL BLADDER DISEASE.*

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Abdominal operations have been the most successful field in modern surgery. The abdomen has received more attention on the part of the surgeon at large and there is no longer an abdominal organ that has not been accessible to surgical treatment. Both acute and chronic diseases yield to the skill of the surgeon. Surgical treatment in the former may be a life saving measure and result in a rapid cure; in the latter a rapid and permanent cure may be the outcome, where prolonged medical treatment has been unsuccessful.

Laparotomy is no longer an operation that should carry with it the fear and dread of the past decades, and human lives should not be sacrificed in diseases, where delay and procrastination are a hazard. When the diagnosis has been definitely established, in diseases where danger is imminent, or if there is a strong suspicion of malignancy in some organ, the attending physician assumes an unwarranted risk by not advising his patient to subject himself to surgical treatment. We cannot expect the internist or general practitioner to be accomplished in surgery, but they should be familiar with the indications, for surgical interference, and, in cases of doubt, insist upon surgical consultation. The surgeon would then no longer be compelled to operate upon cases where diffuse peri-

tonitis has been the result of neglect, with its corresponding high mortality.

After the question of operation has been disposed of, the more important and intricate indications confront the surgeon. It is this point we wish to bring into focus and briefly consider the most opportune time to operate in acute appendicitis and gall-bladder disease.

There are many indications that demand an immediate surgical procedure and many counterindications that demand a postponement of the operation to a later date. It is the difficult task of the surgeon to balance the indications and counterindications and decide upon which side the argument bears more weight. At times it is a difficult task to determine whether a cure cannot be effected without an operation. It must also be taken into consideration, whether the operation does not entail greater danger than the disease itself, particularly, if the morbid grievance is minimal. The counterindication for operation may be evidenced by the diseased organ, or by the general status of the patient; such, as too advanced or too youthful age, synchronous acute or chronic diseases. Aside from these general considerations there are special conditions pertaining to the anatomy or physiology of the diseased organ, that should receive careful study. Many cases of acute infection have succumbed, solely, because the proper time was not selected or was neglected.

APPENDICITIS.

So much has been said about appendicitis in the past years, and the impression is conveyed to many minds, that the last word has been said, and that the subject is antiquated. But, a perusal of the pages of the Year Book of Surgery will be a surprise for the complacent medical optimist to find the hospital statistics on the results of operations for appendicitis marked with a mortality a little above 10 per cent. In the better equipped hospitals the number of cures is 98 per cent., regardless of perforation, gangrene and the severer forms of the malady. There is something radically wrong in this antithesis; there is no reason why all the hospitals should not report 98 per cent. cures. Examining the problem more closely, it becomes evident that delay and the improper choice of time for operation are accountable for the fatal 6 per cent.

Early Operation.—It is now conceded by the entire medical profession, that an early operation is the best, and at times the only chance of a cure. Those, who have an extensive experience in the treatment of cases of acute appen-

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ditis, will agree, that it is an absolute impossibility to foretell what pathological change will take place in a few hours or days, or what is going to happen to the patient. It is beyond our present knowledge to determine, whether the result of expectant treatment will be favorable or disastrous. When the infection is still within the appendix, the danger to the patient is but very little. We agree with the expression of Dr. J. B. Murphy at the International Congress at Budapest: "When an abdomen is opened and shows pus outside of the appendix, as a result of perforation, its presence is incontrovertible proof that the case has been badly managed up to that time."

Diagnosis and operation should be simultaneous, or, to be more explicit, as little time should elapse between the diagnosis and the operation, as is consistent with the preparation of the patient.

The symptoms of acute appendicitis are generally clearly outlined and uniform, and there is no excuse for the development of an abscess through perforation. Careful study of the case and especially the succession of symptoms as described by Dr. Murphy—pain, nausea and vomiting, local sensitiveness, elevation of temperature and an increase in the number of leucocytes—make the diagnosis easy and an early radical operation with its beneficial results possible.

Preoperative Treatment.—The most frequent cause of death in acute appendicitis is the intoxication from a septic peritonitis. It should be our aim to prevent this complication before as well as after the operation. By placing the patient in Fowler position as soon as the diagnosis is made, bringing him to the hospital in this position and keeping him in this position until he is put on the operating table, much can be done to prevent the absorption, or at least avoiding the infectious material from spreading to the upper abdomen, where the peritoneum possesses greater power of absorption. Peristalsis should not be excited by the ingestion of food and ice applied to minimize the distribution of sepsis.

Elevation of Temperature.—There is always an elevation of temperature in acute appendicitis. When the rise of temperature ceases, it gives evidence that there is no continued absorption of toxic products. In cases where no elevation has been recorded, it has been overlooked, and if the patient is kept under close observation, it will always be found some time during the attack. The administration of drugs

may interfere with the rise of temperature and obscure the diagnosis. Vaccines, given for appendicitis or some synchronous disease, may keep the temperature down and may also prevent an increase in leucocytes, that would otherwise occur.

In cases where the latter possibility can be excluded, and no rise of temperature can be registered, in spite of close observation, a question mark should be attached to the diagnosis. Then, if the history is carefully taken and all the data are analyzed, some other condition will be found to exist, that has **confounded with appendicitis**; such as renal calculus and colelithiasis, etc. In these diseases there is no elevation of temperature, unless there is an infection present at the same time; but in acute appendicitis there is always an infection.

Oftentimes we meet with the misunderstanding that presence of pus must cause an elevation of temperature. This is erroneous; there may be a great quantity of pus without a rise of the patient's temperature. The abscess may be walled off, the lymphatics blocked, and the absorption of infective products prohibited. The elevation of temperature is not an indicator of pus, but simply shows that infective material has been absorbed, which is always constant in the beginning of acute appendicitis.

Leucocytosis.—In cases where the temperature is low—99 and 100 deg. F.—the leucocytosis is of great value to determine if actual infection has taken place. A patient upon whom we operated recently had a temperature of 99.5 deg. F. and a leucocytosis of 17500. When all the other symptoms correspond and the temperature is low, an increase in the number of leucocytes is an important diagnostic aid.

There are cases where the pathologic change in the appendix progresses only to a certain degree, and the products of inflammation are discharged into the cecum; the complete cycle of symptoms is then wanting. The following case will serve to demonstrate: Pupil nurse had a slight pain at McBurney's point at 7.00 p. m., which lasted about ten minutes. The pain then disappeared and no other symptoms prevailed. On the next day patient had a return of the pain at 10.00 a. m., was slightly nauseated and palpation over the appendiceal region elicited tenderness. There was no elevation of temperature; leucocytosis 8500. In spite of absence of fever and leucocytosis negative, the patient was advised to submit to an operation. Patient was first seen at 1.00 p. m. and the operation was performed at 3.00 p. m. on the same day.

The appendix contained a fecal concretion about the size of a small bean and an inflamed area around the concretion. The products of inflammation discharged freely into the caput coli. Recovery was uneventful. No doubt another attack would have followed within a short time with more serious consequences.

Streptococcus Infection.—Streptococci pass through the lymphatics and into the blood stream with great rapidity: the leucocyte count is frequently 75,000-80,000. When there is a staphylococcus infection with pus, the appendix is swollen and sensitive, and with pneumococcus infection, there is also tension.

Chill.—The presence of a chill is always to be construed as a more serious condition. Chill is a frequent symptom of gangrene of the appendix; it may also be a manifestation of a great amount of micro-organisms and their toxins being absorbed.

Arteriosclerosis.—Arteriosclerosis is a severe complication in all severe infections and these patients succumb more readily by metastatic infection or gangrene.

Pneumonia.—Acute appendicitis complicated with pneumonia gives a very poor prognosis. Operations for appendicitis when the patient is stricken with pneumonia usually terminate fatally and it is best to treat the patient non-surgically until the pneumonia subsides.

Pregnancy.—Appendicitis during pregnancy is a very grave condition. The percentage of mortality is very high. The more favorable cases are those that are operated upon during the first few hours of the attack. There is a tendency to attribute the symptoms of acute appendicitis to the patient's pregnant condition.

In pregnancy appendicitis causes a constitutional infection very rapidly; pus is absorbed more quickly with the consequent septicemia. After the third or fourth month the uterus pushes the intestines and omentum upwards and away from the cecum. A general peritonitis is thus favored. Appendicitis is frequently the cause of an abortion or a miscarriage. In this instance the micro-organisms in the blood stream infect the area of placental attachment, usually terminating fatally. Whenever appendicitis is complicated with pregnancy, the operation should be performed as quickly as possible. If the patient has recovered from the attack, the operation should be resorted to during the interval period. In every case of appendicitis in the female it is obligatory to inquire as to the possibility of a pregnancy, and, if there is the least doubt, a vaginal examination should be made to have positive assurance. Appendicitis

complicated with pregnancy is always a hazard to the patient's life.

The mortality of non-operative cases is 77 per cent., and the mortality of cases operated upon in the first forty-eight hours is 6.7 per cent. This latter percentage of mortality is very high, and, no doubt, the mortality percentage could be greatly reduced, if the operation were performed within twenty-four or better within twelve hours after the onset.

Mortality.—Dr. William Brinsmade (*Annals of Surgery*, No. 1914, page 610) has operated upon 110 consecutive cases of acute appendicitis without a death. The pathological variety was as follows: Sixteen cases of the catarrhal, forty-two of the relapsing, thirty-six of the suppurating and sixteen of the gangrenous type. Nine patients were ten years old or younger. One woman was 68 years old and one man 76. From this report we can deduct, that the mortality in acute appendicitis should be very low, if the proper time for operation is selected. Dr. Brinsmade believes that the results in his cases are chiefly due to the consistent plan illustrated by the following rules:

First, operate as soon as the diagnosis is made.

Second, make a sufficiently large incision. Use the greatest gentleness in handling tissues within the abdomen and stop operating as soon as the absolutely necessary work is done.

Third, use the Fowler position, Murphy drop and hypodermoclysis.

Fourth, use the stomach tube persistently and intelligently.

Later Operations.—The position taken by Dr. Ochsner in regard to the time for operation in acute appendicitis should receive universal endorsement. He teaches that the appendix should be removed in the earliest possible period of the attack. However, if the patient is not seen until the third day or later, it is best to postpone any operative treatment, until the abscess is circumscribed and well localized. There is no longer any danger at that time, if it is treated simply as an abscess. Incision and drainage is all that is necessary to do in this class of cases; but, if the ruptured appendix lies in the incision, it may be tied off and amputated. The cardinal rule should be, incise and drain and get out of the abdomen. While encapsulation is taking place, all foods and liquids are restricted, and the patient is placed in Fowler position. The abscess is not sufficiently walled off until after the fifth day; the danger to the life of the patient is greatest, if an operation is performed on the third or fourth day.

Gangrene of the Appendix.—One of the most deadly and at the same time deceiving forms of acute appendicitis is gangrene. As a rule the patient is seized with a more or less violent attack of appendicitis, frequently accompanied with a chill. It has been our repeated experience to find these patients treated with opiates to relieve the pain. On the following morning the attending physician will make the discovery that the patient's temperature has dropped from 104 to 99 deg. F., pulse about normal and no tenderness at McBurney's point. He congratulates the patient upon his quick recovery and leaves the house doubting his diagnosis of the night previous. But this patient should have had an immediate operation. Within a short time he becomes worse and presents symptoms of intoxication, and a delayed operation may be too late to save patient's life.

In gangrene of the appendix there is no pain after several hours, because the appendix and its nerves are dead; there is no elevation of temperature later, because with the death of the appendix no absorption took place for some time. There was no inflammation or local peritonitis to wall off the infection and consequently the micro-organisms with their products of infection have free access to the lymphatics and are disseminated throughout the peritoneal cavity and the blood stream. The sudden death of the appendix prevents the formation of adhesions; the onset of gangrene is quick, time being too short for the development of adhesions. The entire appendix can become gangrenous in a few hours.

DISEASES OF THE GALL-BLADDER.

The campaign of the medical profession in educating the public toward the necessity of an operation in appendicitis has been successful, as the lowered mortality percentage will show. Today, if the attending physician is reluctant to the surgical treatment in a case of appendicitis, the enlightened patient himself will demand an operation, or at least request surgical consultation. Give him the same education in gall-bladder disease, and the effort will be crowned with success in a relatively short time by the increase in the percentage of cures. It is not so difficult a task to have a patient submit to an operation, as it may appear on the surface. If the physician or surgeon falters and is not fully convinced himself that an operation is imperative, it is intuitive with even the uneducated patient to perceive the wavering and undecided frame of mind. The facts must be presented with determination and squarely,

and our convictions will meet with response.

Early Operation; Gall Stones.—An early operation in gall stone disease is only counter-indicated by the presence of some condition in the other organs, which would constitute a hazard to the patient's life. Gall-stone operations as a rule, are a successful branch of surgery; this success, however, is dependent upon an early diagnosis and timely surgical interference. Coleliths are in every respect as serious as renal calculi; their complications are more dangerous, but fortunately the operation is a safer management of treatment. The early operation eliminates the necessity of resecting the gall-bladder and preserves it for future function. The dangers that attend the operations for calculi are usually due to advanced disease, through local or general pathological changes.

In an early stage operation, the disease of the gall-bladder is only catarrhal, with the gall stones confined to the gall-bladder, and not accompanied by danger, providing the patient is otherwise in good condition. Delay means courting advanced pathology and complications; as adhesions, perforation, obstruction of the common duct, chronic pancreatitis and malignancy.

Moynihan's scholarly description of the early symptoms of gall stones deserves quotation: "It is of the greatest importance to recognize that the inaugural symptoms due to a gall stone are referred not to the liver or gall-bladder, but to the stomach. The patient complains of fullness, weight, distension, or oppression in the epigastrium, coming on after meals, usually half or three-quarters of an hour, relieved by belching and dismissed almost on the instant by vomiting, elicited with remarkable constancy by certain articles of diet, and dependent rather upon the quality than upon the quantity of food. There is a sense of great tightness which, if unrelieved, may become acute pain; this may be relieved by bending the body forward, flexing the thighs upon the body, or loosening all clothing that may be tight about the waist; while the discomfort lasts he may notice "a catch" in his breath and may not be able to take a deep breath without feeling a stabbing pain at the right costal margin. There may be a feeling of faintness and nausea, and sometimes vomiting may occur. After a rather severe attack of indigestion the body and side may feel stiff for several days. During one of these attacks there may be a sensation of chilliness; the sensation of "goose-flesh" is often experienced. I am disposed to say with-

out hesitancy that gall stones are never present in the gall-bladder without giving rise to symptoms. The timely removal of gall stones is attended by a death rate of less than 1 per cent."

Mayo Robson claims colelithiasis curable by surgical methods in 90 per cent. of cases.

William Mayo in his simple uncomplicated gall stone cases reports a mortality of less than 0.5 per cent.

Ochsner decries the procrastination of surgical treatment until biliary colic, jaundice and the passing of stones have set in. He gives the following indications for surgical intervention:

- "1. Digestive disturbance, a feeling of weight or burning in the vicinity of the stomach after eating; gaseous distension of the abdomen.
2. A dull pain extending to the right from the epigastric region around the right side at a level with the tenth rib, passing to a point near the spine and progressing upward under the right shoulder blade.
3. A point of tenderness upon pressure between the ninth costal cartilage on the right and the umbilicus.
4. A history of having had one or more attacks of appendicitis or typhoid fever.
5. In many cases there is a slight tinge of yellow in the skin, and not sufficient to be perceptible, upon close inspection, especially on the days when the patient is not feeling well, when he complains of feeling bilious.
6. There is usually an increase of liver dullness.
7. There may be a swelling of variable size opposite the end of the ninth rib."

When the diagnosis of gall stones has been made, it is injudicious to postpone surgical treatment. In order to save the patient from grave danger, the gall-bladder should be opened immediately. Delay is equivalent to waiting until the calculus is propelled into the common duct. Operations for stone in the gall-bladder are relatively without danger; but a foreign body in the common duct is a serious operation. There may be no elevation of temperature, but the leucocyte count may be from 15,000 to 25,000, which shows the presence of an infection, of a mild type. Without the leucocyte count it would be impossible to recognize the infection.

Gall-bladders that contain stones are more prone to inflammation than a normal gall-bladder. Gall stones are not necessary, in order that an inflammation may take place. In the majority of cases the infection of the gall-bladder is primary and gall stones secondary; gall stones are the product of inflammation.

Infection.—It is important to note, that in

infections of the gall-bladder the temperature varies with the location of the infection or with the location of the calculus. An infection of the gall-bladder rarely produces a rise of temperature above 101 deg. F. With an infection of the cystic duct the temperature may be 103-105 deg. F., and accompanied by chills. An infection in the common duct produces the same high temperature and chills, and jaundice in addition, when there is an obstruction to the flow of bile. This elevation of temperature according to the location of the infection may be accounted for by the fact, that the fundus of the gall-bladder has very few lymphatics; whereas, the cystic and the common duct have a rich supply that entails an absorption of a great amount of infectious material.

It is a striking fact that a gall-bladder hugely distended with pus will be accompanied with a moderate rise of temperature, while on the other hand a small lesion in the cystic duct with but a few drops of pus will cause chills and a rise of temperature to 103, 104, or 105 deg. F. We must be impressed by this fact, not because it is a phenomenon, not only because it is due to greater lymphatic supply around the cystic and common duct, not only because we know that a greater amount of germs and their toxins are being scattered throughout the blood stream, but because it has a distinct and important bearing upon the course to be pursued, when dealing with the malady surgically.

These conditions in the biliary tract must receive the same consideration as in appendiceal disease. We know from the latter that a high temperature indicates the absorption of a large amount of toxic material that passes into the blood stream freely with little resistance or obstruction. Under these circumstances we know it is dangerous to perform an appendectomy, because the abscess is not walled off by protective adhesions to prohibit the micro-organisms from invading the blood stream by way of the lymphatics. Then after localization and lymphatic blocking has taken place, we simply incise and drain and get out of the abdomen as quickly as possible without any further surgical interference.

In infections of the gall-bladder the course of infection is exactly the same. It is more dangerous to operate in the upper right quadrant when the lymphatics are not blocked than to use surgical treatment under like conditions in the lower part of the peritoneal cavity, on account of the susceptibility of the peritoneum in the upper abdomen toward infection. The mucosa of all viscera that have a fundus have a

small supply of lymphatics in the fundus; such as the uterus, gall-bladder, stomach and urinary bladder; but their cervix is rich in lymphatics.

An infected gall-bladder, with the patient's temperature above 102 deg. F., should not be operated upon until the fever has dropped below 102 deg. F. If this rule is followed the success in the treatment of gall-bladder disease will take a decided step forward. An exception, however, must be made in greatly distended gall-bladders where rupture is imminent. All that need then be done, is to make an incision large enough to fasten the gall-bladder with a few sutures and drain. It is extremely dangerous to employ any method, instrumental or digital, for the purpose of sounding or removing gall stones. Cases subjected to this kind of treatment usually terminate fatally.

A short time ago it has been our experience to witness a fatal outcome, caused by the apparent eagerness to drain and evacuate the calculi at the same time. A patient was brought into the operating room with a temperature of

104 deg. The gall-bladder was distended with pus. After the pus was discharged, a gall stone scoop served to exenterate about twenty stones. Septicemia set in and the patient died a few days later.

From the brief description of the indications for operating in appendicitis and gall-bladder diseases, it becomes apparent, that in both afflictions the choice of time for operation runs parallel. An early operation is necessary in diseases of the appendix and the gall-bladder to avoid progressive pathology, to lessen the difficulty and seriousness of surgical treatment and to minimize the attending hazard to the patient's life.

In late operations, whether neglected cases or presented too late for early surgery, the greatest care must be exercised to grasp the most opportune time to act, because they are the more serious cases, and the patient's life depends upon the choice of time for operation.

902-904 David Whitney Building.

PROPAGANDA FOR REFORM.

Hypochlorites in Infected Wounds.—Dakin points out that he claims no credit for the "discovery" of the "new antiseptic." He explains that the "new antiseptic" was discovered by Berthollet in 1788. The solution used by Dakin and others is essentially the well-known Labarraque's solution or solution of chlorinated soda. The claims as to the efficiency of the various modifications which are being used in France and England are decidedly contradictory. The one conclusion which all results with the various hypochlorite solutions appear to justify is that hypochlorites, whether applied in an acid solution, in an alkaline solution or in a neutral solution, are of genuine value in the treatment of infected wounds (*Jour. A.M.A.*, Feb. 5, 1916, p. 430).

Oxybon Declared Fraudulent.—On January 15, 1196 a fraud order was issued by the postmaster-general against the Oxybon Company, Chicago. The Oxybon was one of the gas-pipe frauds, which included the Oxydonor, the Oxypathor, and the Oxygenor (*Jour. A.M.A.*, Feb. 12, 1916, p. 526).

The Therapeutic Value of the Hypophosphites.—At the request of the Council on Pharmacy and Chemistry, Dr. W. M. Marriott, Johns Hopkins University, has examined the evidence for and against the therapeutic value of the hypophosphites. Experiments were carried out to determine the "food" value of hypophosphites. The hypophosphites were introduced into medicine by Churchill in 1858 on a basis of an incorrect theory and utterly insufficient and inconclusive clinical evidence; their use has been continued without justification by any trustworthy evidence for their efficiency. By actual trial on human subjects Marriott shows that at least 85 per cent. of the ingested hypophosphites are excreted unchanged. Further, he holds that there

is no proof that the remaining 15 per cent. is available to the organism. It is doubtful if there are any conditions in which the body suffers from lack of phosphorus. Marriott concludes that there is no reliable evidence that hypophosphites exert a physiologic effect; it has not been demonstrated that they influence any pathologic process; they are not "foods." If they are of any use, that use has never been discovered (*Jour. A.M.A.*, Feb. 12, 1916, p. 486).

Tanlac.—Food Commissioner Helme of Michigan reports: "A new panacea for the cure of 'all ailments of the stomach, kidneys and liver, catarrhal affections of the mucous membranes, rheumatism, nervous disorders and the like' is offered to the public under the name of Tanlac. The label on the bottle neatly avoids the pure drugs act by claiming to be only a 'tonic and system purifier.' An analysis of Tanlac in the laboratory of this Department shows the following: Alcohol 16.4 per cent., Glycerin 2.0 per cent., Licorice present, Aloes or Cascara present, Gentian present, Alkaloids (Berberin) trace. The presence of a trace of tartaric acid shows that wine is the base of this medicine. The 16 per cent. alcohol gives it the 'kick' that makes a fellow feel good and ought to fill a long felt want in 'Dry Counties.' Aloes is a laxative. Gentian is a bitter drug, a so-called tonic. If the reader wants to be cured by the Tanlac route at one-fourth the expense, let him get a quart bottle of good sherry wine. Then go to the local druggist and get 1¼ drams of glycerin and 2 drams each of aloes, gentian, licorice and cascara. Mix (if you wish) and you will have Tanlac so near that neither you nor the manufacturer can tell the difference. This formula will give four times the quantity found in an ordinary \$1 bottle of Tanlac (*Jour. A.M.A.*, Feb. 26, 1916, p. 676).

TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, January 12, 1916

The President, UDO J. WILE, M.D., in the Chair
Reported by REUBEN PETERSON, M.D., Secretary

A HISTORY OF FAMILY CATARACTS THROUGH FOUR GENERATIONS.

WALTER R. PARKER, M.D.

(From the Clinic of Ophthalmology, University Hospital, Ann Arbor, Michigan.)

While it is unusual to be able to establish a hereditary factor as a cause of cataracts, every now and then reports of family cataracts running through several generations point to a true hereditary influence. The late Mr. Nettleship devoted much time to the study of this subject and we are indebted to him for the tabulation of many remarkable family histories.

The most common congenital defect in the formation of the lens is that known as the lamellar or zonular cataract. It is a form of cataract which develops just before or shortly after birth. The opacity occurs in two or more contiguous lamellae of the lens fibers enclosing a clear or partly opaque nuclear portion of the lens substance. The degree of opacification varies from that in which the opaque zone at its equator can be just distinguished to a density through which no red fundus reflex can be seen. (Weeks.)

The age at which cataracts occur in members of a family affected is generally about the same. Nettleship, however, in a large series of cases makes out a good case for "anticipation," the cataracts in many cases tending to appear earlier in each generation. But as Dr. Callan says in Wood's Encyclopedia, "It must be remembered that the beginning of cataracts is more likely to be discovered the nearer one approaches the present time. This is true not merely because methods of observation are more precise and medical men are more prone to make careful examination of eye conditions than formerly, but because the younger patient knows there had been an unusual number of cataractous eyes in his family and is more likely to be on

the watch for early signs of oncoming blindness than one whose family eyesight in the past has been good."

The family whose history I wish to present represents four generations including twenty-seven members, thirteen of whom had cataracts. (Fig. I.)

I. The original parent was known to have had cataracts, but no details as to their nature or time of onset are available.

II. The second generation presents a childship of four, three males, Nos. 1, 3 and 4, and one female, No. 2. All had cataracts coming on early in life.

III. In the third generation there was one childship of six members, two males, Nos. 2 and 4, and four females, Nos. 1, 3, 5 and 6. Of the females, Nos. 1 and 3 had cataracts, No. 1 coming on at the age of 12, and No. 3 at the age of 7. Second childship of two members, one male No. 7, and one female No. 8. No. 7 had congenital cataracts. Third childship, two females, Nos. 9 and 10. No. 9 had cataracts coming on in infancy and was operated on December 19, 1904.

IV. In the fourth generation there was one childship of two members, one female No. 1, and one male No. 2. Female had cataracts at the age of 14, with a history of poor vision since birth. Operated July 8, 1912. Second childship of four members, two marriages, one female by the first marriage, No. 3, had cataract at the age of 8, died at the age of 24. Three members by the second marriage, two males, Nos. 4 and 6, and one female No. 5. One male, No. 4, had cataracts since childhood and was operated on October 18, 1915. One female, No. 5, discovered cataract at the age of 17 and was operated on July 14, 1914. Third childship of one male, No. 7, unaffected. Fourth

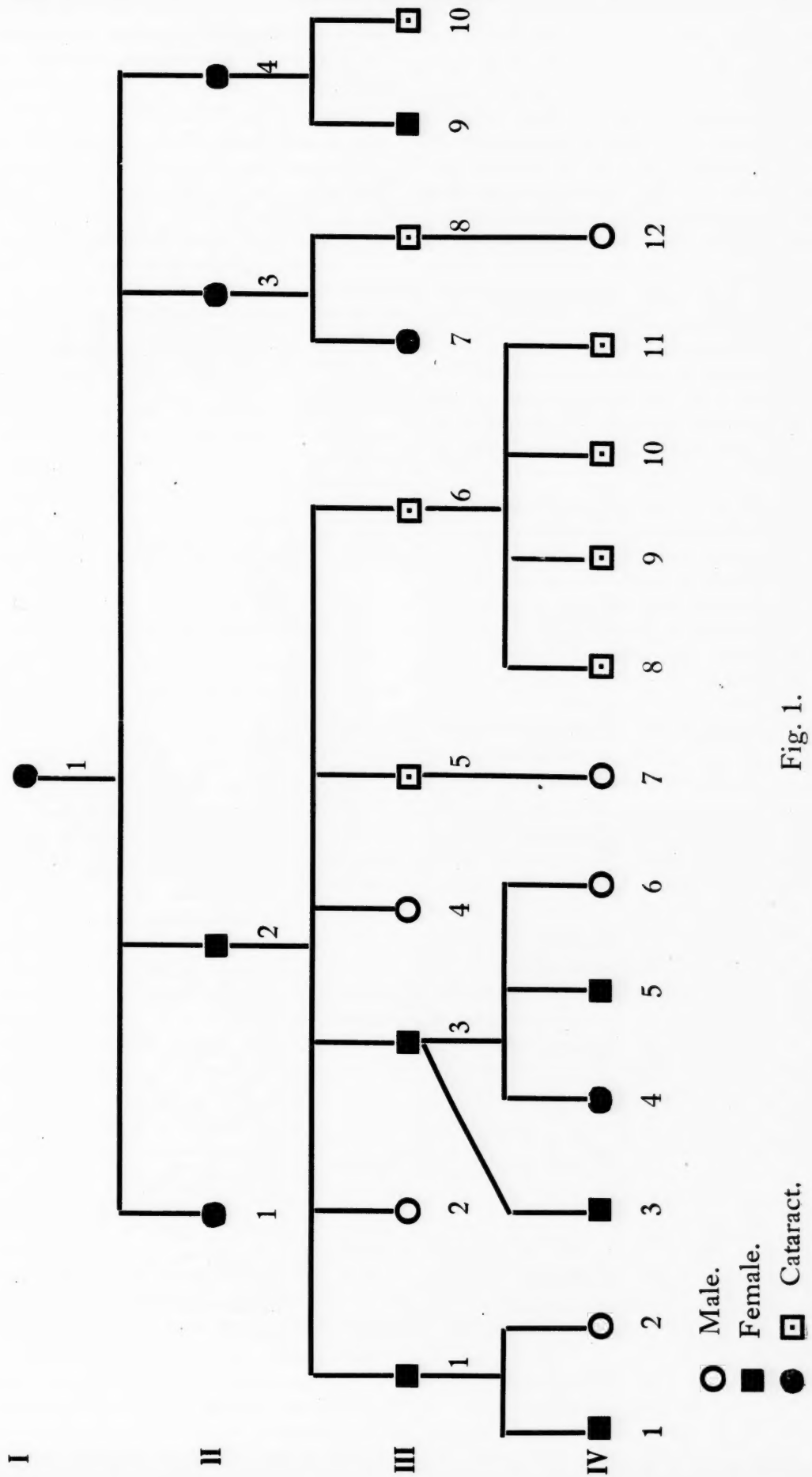


Fig. 1.

childship of four females, Nos. 8, 9, 10 and 11, all unaffected. Fifth childship, one male, No. 12, unaffected.

In regard to the sex most often affected, Nettleship shows that family cataracts more often descend through the female members and that they tend to select one sex to the exclusion of the other. He also observes that when cataract affects more than one generation irrespective of age, development, or variety, it usually descends from parent to child, and does not skip a generation, that is, they are direct and sex limited.

The inheritance in the family here reported was from female to female in five cases, from male to male in five cases, and from female to male in one case, and from male to female in two cases.

As far as could be determined there were no instances of other congenital defects and not a common incident was present apart from the occurrence of cataract, except myopia which was present in all four patients on whom I operated. There was no consanguinity of parentage. Wassermann was negative in three cases. The urine in the four cases examined was normal.

Whether the possibility of familial cataracts depends on an anomalous development of the nutrition of the lens or some systemic peculiarity common to members of the affected childship is not known. The nature of the development of the cataract also is still in doubt. While it is thought by some to be congenital, others think it develops as a rule during the first years of life.

It has been observed that very many patients with lamellar cataract suffer from convulsions during infancy. Rickets, too, has been thought to have an etiologic connection. Indeed it has been reported by Reuhr that 88 per cent. of 153 cases of lamellar cataract showed signs of rickets.

It is claimed the noxious quality of the disease induces the morbid changes in those layers of the lens that are present, or in process of formation at a certain time. This contention is borne out by the fact that lamellar cataract is rarely seen in countries in which rickets is rare. In spite of this apparent relationship however, it has not been proved that this disease is a true cause of this form of cataract. There has also been some evidence to show that tetany is responsible for their development.

No one of the cases in the family here reported came under observation as a child, but no

history of rickets or tetany has been established. The history in this respect, however, is not complete.

DISCUSSION.

DR. GEORGE SLOCUM: The phenomenon of heredity in diseases of the eye is very interesting and is not uncommon. A few years ago two sisters came to this clinic both having aniridia and congenital dislocation of the lenses. The family history was that the mother was born with aniridia and one sister and a brother had partial aniridia. Less extensive hereditary colobomata are frequently encountered. Hereditary retinitis pigmentosa is particularly interesting because of the fact that the unaffected daughters usually transmit the disease to the male children, the females in each generation usually remaining unaffected. Coraliform cataract, a peculiar form of congenital cataract, has been shown to be hereditary and the genealogy of a family of sixty-eight individuals in five generations, twenty-nine of whom had cataracts, was reported by Nettleship. The hereditary nature of several other conditions seems also well established; even some types of refractive error, notably high degrees of astigmatism, have repeatedly shown an undoubted hereditary tendency.

SARCOMA OF THE BREAST.

GEORGE D. SUTTON, M.D.

(From the Surgical Clinic, University Hospital, Ann Arbor, Michigan.)

This evening I wish to report two cases of sarcoma of the breast. Case 1, Mrs. C. B., age 73, who entered the Surgical Clinic of the University Hospital October 26, 1915 for treatment of a large and painful mass in the left breast. Her family history is negative.

Her personal history shows that she had measles at the age of 5 with good recovery. Her menses started at 13 and were irregular until the age of 16. She was married at 23 and had two miscarriages which were induced during the second month. The menopause occurred at 40, the change gradually taking place and causing practically no trouble. Since then there has been no discharge of any kind.

There is a large goiter which first made its appearance during girlhood and is now smaller than it has been during the past few years. The right lobe is larger and is of cystic consistency. She has experienced exophthalmic symptoms.

Over forty years ago a small hard mass, the size of a hen's egg, appeared in the right lower quadrant of the left breast. It grew slowly but gradually with no pain and practically no inconvenience to the patient. About two and one-half years ago it began to grow more rapidly and at that time was about the size of a lemon. One year ago it was the size of the patient's fist and

from this time on attained its present size. Pain has been experienced only during the last year, and then at the spreading borders of the growth and was very sharp and lancinating in character.

When she entered the Hospital the tumor mass was supported and carried in a sac which was improvised from underclothing. During the last forty years no one was permitted to see the growth until two weeks before she entered this Hospital. The pain gradually be-



Case 1. Sarcoma of the Breast.

came very severe and two large purplish spots appeared which seemed about to ulcerate. Being unable to pick her plums as usual, and having to hire a boy for this purpose she finally sought the services of a local physician who advised immediate surgical treatment, the patient up to this time having had no idea of an operation.

Examination showed a large tumor of the left breast which was nearly one and a half times the size of the patient's head. It was movable and not closely adherent to the deeper structures of the chest wall. Its base was five inches in diameter, greatest diameter fourteen inches and height eight inches. It was lobulated and at the border were softer tender nodules which were of more recent development and caused the greatest pain. In the region of the nipple there was a mass the size of a hen's egg.

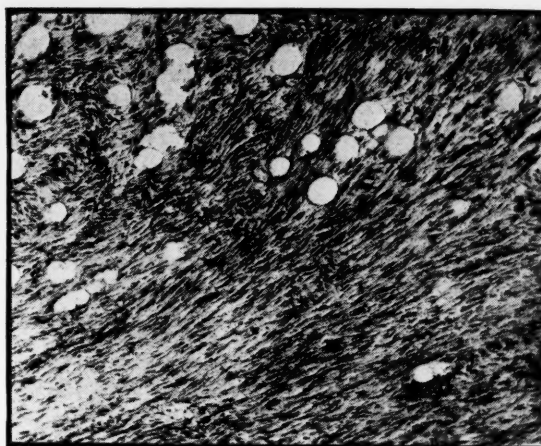
The skin over this tumor was smooth, tense, and shining, and contained large, dilated, radiating veins, and a vast network of smaller ves-

sels. Very slight injury had caused profuse hemorrhage. There was no evidence of clavicular or axillary glandular involvement. In a reclining posture the tumor mass rested on the left arm, but when sitting erect it extended directly forward, thus allowing comparatively free use of the arm.

She was not emaciated but was partially deaf and afflicted with palsy. Blood; Hgl. 90, R. B. C. 3,540,000 W. B. G. 9,500. Serologic test, Wassermann negative. Urine negative with the exception of a few hyaline casts. Otologic examination showed senile auditory nerve atrophy. Dental surgical examination showed pyorrhea.

The patient was operated upon by Dr. Darling, October 30, 1915. A very light ether anesthesia was administered because of myocarditis and very irregular pulse which tended toward the perpetually irregular type. The lung examination was negative. An incision was made sufficiently high at the upper and lower border of the tumor to insure the meeting of the flaps. On removal of the mass from the muscle from above downward no evidence of infiltration was observed. By inserting hemostats into the tissue which was put on a stretch and just ahead of the knife, the hemorrhage was easily controlled.

Immediately after the removal of the tumor,



Case 1. Microphotograph, Sarcoma of Breast. Case of Mrs. C. B.

which weighed ten pounds, pressure and hot packs were applied to the precordium, then gradually removed in an attempt to prevent a sudden embarrassment of the heart action. The wound was closed with silkwormgut sutures.

Since the patient was a bad risk speed was indicated. The pulse before anesthesia was 86 and after 88 and of fair quality. The skin, however, became very cold and was slightly covered with cold perspiration but quickly cleared up. The time taken to remove the tumor was

fourteen minutes, the time necessary to complete the operation was twenty-four minutes and the duration of anesthesia, twenty minutes.

The gross pathology of this mass showed an encapsulated ellipsoidal tumor which was firm, lobulated and possessed areas of cystic degeneration. The cut surface was grayish white and the numerous lobules were made up of whorls of connective tissue cells giving it a wild appearance. Microscopic examination showed many large spindle cells and no evidence of glandular elements. There was a lack of system in the arrangement of the cells which gave an indication of their wild and rampant growth.

She experienced an uneventful recovery and was discharged on the fourteenth day, cured from her surgical condition.

Case 2, Mrs. D. C., who entered the Surgical Clinic, January 24, 1912 because of a tumor of the right breast. Her family and personal history was negative. She was operated upon by Dr. Darling, January 25, 1912 who performed a radical operation of the breast and axilla.

The pathologic report on this tumor showed a cystic adenofibroma of the breast with sarcomatous stroma. There were small metastasis in the lymph glands of the axilla.

On the twelfth day she was considered cured from her surgical condition and discharged.

A graphic description of breast sarcoma has been given by Creighton, as follows:

"A tumor of the breast will be diagnosticated sarcoma if it bulges out as a globular or ovoid or spherical mass carrying the nipple erect upon its summit or at one side; distending the skin which is often red or livid, glazed, thin and ready to burst, having a definite rounded contour wherever it can be felt, nodulated or lobed, feeling tense or elastic, of rapid growth; or, if it has burst through the skin, making a bleeding fungus with overhanging edges or a fleshy lobulated knob or button covered with a fleshy pellicle. On section it will be found uniformly grayish or fleshy, separated into rounded or oval lobes or into convolutions, with a lobulated or scalloped margin, encapsulated, vascular, interspersed with areas of extravasated blood or of blood pigment, or with opaque yellowish or sand colored tracts, or with friable necrotic centers; if there be much mamma left, it will be borne upon the surface of the tumor at one or more sides as a distinct stratum." (*Cancers and Other Tumors of the Breast*, Williams and Norgate, London, 1902). (*Treatise on Tumors*, Hertzler, 1912).

Much of the literature on breast sarcoma

comprises only isolated case reports and one is impressed with the relative rarity of this disease.

Dr. Armstrong reported a case of sarcoma of the breast in the *Montreal Medical Journal*, April, 1903. "A woman, aged 35, entered the hospital complaining of the size and weight of the left breast, and also of free hemorrhages from it on several occasions. The growth had begun as a hard and painful lump, the size of a walnut, just to the inner side of the left nipple. It increased to the size of the fist by the end of the first year. From then on it grew rapidly and became softer and three months before admission, hemorrhage occurred to the extent of two quarts according to the patient's statement. Following this there were frequent hemorrhages." Dr. Armstrong removed it very freely, together with a few glands from the axilla showing inflammatory enlargement.

The tumor was benign for the most part and weighed about four pounds. It was of fibrocystic nature and supposed to be innocent up to the time of rapid enlargement. However, sarcomatous cells could be found in distinct masses in very many places and are supposed to have been the cause of rapidity of growth.

At the same meeting Dr. Keenan reported a case where there was a clear history of fibroadenoma having been present for ten years and then rapid enlargement following a slight injury. The growth proved to be fibroadenoma with sarcoma cells invading it.

The following case of sarcoma of the breast was reported at the meeting of the Clinical Society of the University of Michigan, January 2, 1907 by Dr. Frank A. McJunkin.

Miss P., age 47, was admitted to the Surgical Clinic, November 23, 1906 for treatment of tumor of the breast. Six years previously she noticed that the right breast was hard in consistency and somewhat larger than the left. It grew gradually but slowly up to July, 1906, but during the remaining four months it grew much more rapidly. Examination showed a growth the size of the patient's two fists and fairly movable and apparently encapsulated. A part of the mass was cystic while the remainder was of a solid consistency.

Microscopic examination showed the presence of sarcomatous cells.

Dr. S. H. Geist and Dr. A. O. Wilensky report, in the *Annals of Surgery*, July, 1915, five hundred and fifty-eight cases of breast tumor including chronic inflammatory growths both simple and specific from the Mount Sinai Hospital, New York, during the last ten years.

"Of these, twenty-two or 3.9 per cent. were sarcomata; two hundred and sixty, or 46.5 per cent. were carcinomata. The twenty-two sarcomata were grouped as follows: fibromyxosarcoma, five; spindle cell sarcoma, five; round cell sarcoma, four; cystosarcoma phylloides, four; giant cell sarcoma, two; and perithelioma, two. The fibromyxosarcoma and spindle cell sarcoma are the most common types. The tumors occurred in women between the ages of forty-nine and twenty-nine, thirty-nine being the average. In 57 per cent. the right breast was involved, in 33 per cent. there were bilateral tumors, and in 10 per cent. there was involvement of the left breast. The duration of the tumors varied from one week to nine years and there was a variation in size from that of a walnut to that of an adult's head. In one-third of the cases the skin was fixed to the tumor."

The frequency of sarcoma of the breast is considered by Rodman (*Journal American Medical Association*, 1911) at 2.7 per cent. In six hundred and ninety-four tumors of the mammary gland, Bloodgood (Kelly and Noble, *Gynecology and Abdominal Surgery*, 1908) found fourteen cases of sarcoma or 2.01 per cent. Out of three hundred and fifty-five cases of mammary tumors Poulson (*Archiv. f. Klin. Chir.*, 1891) reports thirty-three cases of sarcomata or 9.2 per cent. (Reference "Treatise on Tumors" Hertzler, 1912).

Sir Roger Williams (*Diseases of the Breast*, 1894) analyzed 13,824 primary neoplasms of the breast (males, 4,593; females, 9,227); 1,081 were sarcomata (males 559; females 552) and only ninety-nine were sarcomata of the breast (males 5; females 94). He found 9.4 per cent. of the body neoplasms to be sarcomatous, and only 3.9 per cent. of tumors of female breast to be sarcomata. As compared to cancer of the breast it is rare. He analyzed 2,397 consecutive neoplasms of the female breast and 1,863 or 77.7 per cent. were cancers, while only ninety-four or 3.9 per cent. were sarcomata, thus showing the greater stability of the connective tissue elements of the gland. He also found that 54.5 per cent. of all neoplasms were cancers and of these 77.7 per cent. were cancer of the mammae; 9.4 per cent. of all neoplasms were sarcomata and of these 3.9 per cent. were breast sarcomata. This shows the relative frequency of cancer in the female breast and that it is high above the average while the frequency of sarcoma is far below the average.

"Sarcoma of the breast may have its origin in the intralobular hyaline connective tissue,

or in the denser interstitial fibrous stroma surrounding the gland or it may be a metastasis from a distant primary growth, e. g., the ovary or tonsil. Instances of all the various cellular varieties have been reported but with the exception of the spindle cell type they are of extreme rarity. The most common variety is that which develops from the intracanalicular myxoma which in their later stages tend toward malignancy." (Keen, *System of Surgery*, Vol. III, 1908).

It is thought by Johnson to be a dangerous delusion and unsurgical procedure to amputate the breast without clearing out the axilla. Also, that sarcoma invades the lymph vascular system very nearly as quickly as carcinoma and that no reliance can be placed on the supposed absence of the glandular involvement. (Johnson, *Operative Surgery*, 1915).

"The complete removal of the breast and the greater pectoral muscle should be practiced in every case. In the case of small sarcoma the excision of the tumor with a good margin of healthy breast tissue may suffice but where any doubt exists the complete operation should be employed. One should never temporize or compromise with malignant growths." (Keen, *System of Surgery*, Vol. III, 1908).

The first case (Mrs. C. B.) reported in this paper illustrates the fact that all tumors of the breast are potentially malignant, and that not only do malignancies arise from glandular elements but very malignant growths may arise entirely from connective tissue elements. The second case (Mrs. D. G.) teaches us that sarcoma is not only conveyed through the blood stream but also by way of the lymph vascular system.

DISCUSSION.

DR. WALTER A. HOYT: I have taken the pains to look up the number of cases of malignant disease of the breast which have occurred in the University Hospital during the past five years to establish the frequency of sarcoma in the relative small number of cases. In the last five years we have records of 135 cases of malignant disease of the breast. Of this number only two were definite sarcomata of the breast. Practically all of these growths were examined microscopically and were carefully studied. This would give a percentage of not over $1\frac{1}{2}$ per cent. These figures would lead to the conclusion that in this clinic, at least, sarcomata are not as frequent as reported elsewhere. (3.9 per cent.)

The interesting point in Case 1, is the long duration of the tumor up to the time that there was any noticeable change, and also the length of time that this patient concealed the presence of the tumor in the breast. It took a good deal of tact even after she entered the Hospital to persuade

her to submit to an examination. She was very sensitive and at the last moment was even going to give up and not let us examine her after she had come a couple of hundred miles to the Hospital for operation.

The question of axillary involvement is also interesting. The older and many of the newer text books say that there is no axillary involvement in sarcoma of the breast. However, a good many cases of such involvement have been reported. In Case 1 it was impossible to palpate any axillary glands which is also true of a large number of carcinomata of the breast. In such cases, however, when the axilla is opened up large glands are found under the pectoral muscle. A radical operation was not performed on the first patient for the simple reason that we were positive the patient would not be able to stand it. The mass was removed as a palliative procedure, of course with the hope that a cure would result. Had this tumor remained the patient would have had severe hemorrhages, similar to the one she had, and eventually the bleeding would have caused her death.

DR. REUBEN PETERSON: I would like to ask Dr. Sutton in closing the discussion if he will give us statistics with regard to the recurrence of this kind of tumor of the breast.

DR. UDO J. WILE: I should like to ask a question bearing on the pathology of this tumor. It struck me as I examined it that it was not very cellular. It is almost inconceivable, as far as my pathologic knowledge goes, for a round cell, or for a giant cell sarcoma to have existed as long a time as this without having long before that caused the patient's death. I would like to know if this was not distinctly a fibrosarcoma and very acellular.

DR. SUTTON: The pathologist reported that it was a spindle celled sarcoma.

DR. WILE: I think that is a very striking feature.

DR. SUTTON: Statistics show that about 75 per cent. of the patients operated upon are cured by the operation. There are recurrences, however, and by succeeding operations, cures are often obtained.

REPORT OF A CASE OF MULTIPLE CARCINOMA WITH INVOLVEMENT OF THE BRAIN.

ALBERT M. BARRETT, M.D.

(From the Clinic of Psychiatry, University Hospital, Ann Arbor, Michigan.)

The report and demonstration which I wish to make concerns a case which was at the Psychopathic Hospital a few weeks ago.

The patient was a woman who had always been comparatively well until she was 33 years of age. The only previous disturbances had been occasional attacks of biliousness since her youth, and an injury to her left eye which left a permanent cicatricial contraction of the pupil. In 1914 she had an epithelioma removed from the left forearm.

About July 1, 1915, she complained of headaches and showed an unusual amount of worry

over her household work. She had frequent attacks of severe vomiting. From this time on her health deteriorated. The headaches continued and there were several attacks of vomiting each week. She appreciated that she was not mentally normal. She became unable to do the intellectual work that she had formerly done, and as she expressed it. "All sorts of fancies and fairy tales are passing through my head." Her vision became impaired and she became unable to do more than simple tasks.

On October 30 the wagon in which she was riding was struck by an automobile. She had no direct injury but was unusually nervous after the experience. In a few days there was a partial motor and sensory paralysis on the right side. The weakness was more marked in the leg than in the arm. At times she was unable to express herself because of a speech disturbance. These conditions brought about her admission to the Psychopathic Hospital on December 6, 1915.

A satisfactory physical examination was much interfered with owing to the deep stupor of the patient and consequent lack of any coöperation.

The laboratory examinations showed nothing pathologic in the urine. There was a leucocytosis of 11,450-13,500. The cerebrospinal fluid showed greatly increased pressure. The albumin was slightly increased, measuring about twice the normal amount. The Nonne-Apelt and Noguchi tests for globulin were weakly positive. The cells numbered eight per cubic millimeter. Lange's colloidal gold test was negative. The Wassermann reaction on the fluid and on the blood was negative.

At the time of her admission on December 7, 1915, she staggered as she attempted to walk and would fall if unsupported. Both eyeballs were prominent and vision was much diminished.

Mentally she understood questions when these were put forcibly but her replies soon rambled into disjointed and irrelevant remarks. Spontaneously she kept up a continuous talk, made up largely of fabrications of her personal and domestic experiences. In her speech there were often paraphasic disturbances and some perseveration. Objects placed in her hands were often miscalled; her reply was usually a paraphasic distortion of the proper name or some related idea.

Eye movements to the outside of the mid line were impossible. The reactions of the left pupil were interfered with by a large scar. The right pupil was dilated and its outline was

irregular. It gave no response to direct light stimulation.

The tongue, when extended, deviated to the right. The right knee jerk was more prompt than the left and there was a Babinski reflex of the right foot.

On December 9, an examination of the fundus by the Department of Ophthalmology showed in the right eye a choked disc of four diopeters with hemorrhage into the retina.

There was little change in her condition from day to day. There were some days when she talked spontaneously, but usually she lay in a deep stupor.

On December 19 she had an attack in which the head was turned to the right and there was spontaneous horizontal nystagmus. The body was relaxed and there were no twitchings. About two hours later there was another somewhat lighter attack.

Generally she had no control over her bladder or bowels.

On December 17 the Department of Roentgenology reported that X-ray negatives showed "an erosive and irritating process in the left temperosphenoidal lobe, with additional erosion of the petrous portion of the temporal bone."

On December 30 she was semi-stuporous, and, seemingly from pain, she resented being disturbed. The right lid was moved more weakly than the left. At rest the right angle of the mouth was lower than the left. Both eyes moved inward but there was complete paralysis of both external recti muscles. There was no spontaneous nystagmus, but when the left eye was turned inward there were a few lateral jerks, the swifter component being towards the inner side. Both corneal reflexes were present. There were no sensory disturbances of the face. Movements of the arms were well done, excepting that the left arm was used more freely than the right. The tendon reflexes remained the same as in the former examination.

To tests with pain and touch stimuli she reacted quite well. She correctly named objects which were placed in her left hand, but the same objects when placed in her right hand were either not identified or were given the name of some object recently held in the other hand.

It had become apparent from the history and examinations that the disturbances in this patient were due to an intracranial tumor. The question of localization presented difficulties. The symptoms of right sided paresis, the paraphasic and right sided agnostic disturbances,

placed the tumor in the left hemisphere. The left sided auditory nerve deafness and a weakness of the left facial nerve from a peripheral involvement suggested a disturbance in the region adjacent to the exit of these nerves at the base. The paraphasic disturbances and the information derived from the X-ray examination showed involvement of the left temporal lobe.

The bilateral involvement of the sixth nerve was difficult to explain by a tumor located only on one side. It seemed probable that this might be due to disturbances consequent upon the high degree of intracranial pressure which was present. If not, it might be that there were multiple tumors, some of which lay in the course of these nerves.

There was from the first an unusual degree of psychic disturbance in this patient. Not only was she stuporous but there were symptoms of disturbed thought and an apprehensive delirium. The rather definite localization of this tumor outside of the frontal region, involvement of which is usually found when psychic anomalies are present, suggested that these mental symptoms were dependent upon the general cerebral disturbances from the intracranial pressure.

The absence of a disturbance of the fifth nerve and the impossibility of determining any certain cerebellar involvement seemed to be sufficient for excluding a tumor of the cerebello pontine angle. At no time was there sufficient clearness as to localization to warrant surgical treatment.

The patient continued to fail and died December 31.

At the autopsy there were found a few small nodular protrusions of the skin of the chest, small tumors about the size of a small bean in the heart muscle and numerous small nodules scattered throughout both lungs. There were many small nodules scattered over the surfaces of the diaphragm. The mediastinal glands were enlarged. The mesentery and parietal peritoneum showed many small nodules. The head of the pancreas was involved in a large mass, the size of an orange. The liver contained several large nodules. The left tube and ovary were much thickened.

The examination of the brain showed the changes produced by intracranial pressure. The dura was tensely stretched. The pia was dry and velvety. The convolutions of the convexity of the brain were much flattened. The brain substance was flabby and wet. The left temporal region was extremely softened and about

2 centimeters back of the tip, a cyst with fluid contents extended to the surface.

In the superficial examination of the brain, there were observed several small nodules near the surface of the left frontal lobe, and a larger nodule in the right occipital lobe.

The brain weighed 1375 grams.

After fixation in 10 per cent. formaline, the brain was cut into longitudinal sections. In every plane the brain showed sharply circumscribed focal lesions, differing in size and appearances. The number of metastases is difficult to estimate. In one plane there were seven. One might safely state that there were at least fifty tumors scattered through the brain substance. The smallest measured a few millimeters in diameter. The largest was fully 5 centimeters across. This one occupied the tip of the left temporal lobe and had broken down into a cyst filled with a fluid content. In color, these which were not degenerated were a little darker than the gray of the cortex. Their outline were roundish or oval. They were most frequently found just beneath the gray border of the cortex.

Two other large tumors lay, one in the central white substance, between the posterior end of the left island and the ventricle, the other in the cortex and underlying white of the left second temporal convolution. Both of these larger lesions were much broken down and had numerous cavities.

The histologic study of the tumors present in both the body and brain showed them to be a richly cellular type of carcinoma. Sections from tumors of the brain presented some differences in appearances, depending upon the extent of degeneration which the tumor had undergone. In all tumor collections the characteristic cells were of an epithelial type. These were arranged in masses or strands with very little separating stroma.

In some places the pia adjacent to the tumor was densely packed with cells like those of the tumor itself. The margins of the tumor were always sharply separated from the brain substance. There was no marked reaction of the glia around the tumor, and there was no well differentiated capsule. In the vicinity of the tumor were grouped dense collections of cells, seemingly entirely cut off from the larger mass.

Around some of the blood vessels, at a considerable distance from the tumor, were a few cells of the type of those of the tumor.

As far as the central nervous system was concerned, the process was one of multiple carcinomatous tumors, which from the other find-

ings in the case were metastatic from tumors in the body organs.

The case and its findings are interesting in the lack of physical disturbances, which suggested such extensive carcinomatous changes as occurred in the body organs. As far as the brain condition is concerned, carcinoma is not a common type of tumor. Among some fifty-five brain tumors in our laboratory collection there are but four instances of carcinoma. In two of these the tumors were metastatic. The others were tumors growing from the epithelial structures of the choroid plexuses. Of some interest is the bilateral paralysis of the sixth nerves without any focal lesion in their course. The peculiar and prominent psychic disturbances may have their explanation in the effects produced by such widespread distribution of the tumors and the presence of several tumors in the frontal lobes.

DISCUSSION.

DR. CARL D. CAMP: Dr. Barrett said metastatic tumor of the brain is not common, and yet metastases to the nervous system, taken as a whole, must be considered sufficiently frequent to be of considerable practical importance. It so happens that in the year 1915 I saw five cases of metastases of carcinoma to the spine. One of these cases was operated outside of the Hospital. This was a case in which the metastases came from the mammary gland which had been removed five years before for carcinoma. Another of these cases was one reported by Dr. Sherrick from my clinic in the Hospital, in which the primary focus, according to Dr. Warthin, was probably in the head of the pancreas, an interesting thing in connection with Dr. Barrett's case where the primary focus was also probably in the head of the pancreas. In two other cases, in one metastasis was from the thyroid and the other from the prostate. In another case the original focus was not discovered. In this last case the patient died some time after attempted operative removal, but autopsy was not made. In all of these cases the diagnosis was confirmed either by operation or autopsy, or both.

These are not favorable cases for operation. In the case of the spinal metastases, one generally finds that the metastasis has been into the vertebrae. In the case reported by Dr. Sherrick the entire length of the spine was infiltrated with carcinoma. And even the base of the skull showed a carcinomatous infiltration.

In the case of brain and spinal metastases one finds, I think, two distinct types. The one is the multiple, discrete tumor such as is shown here by Dr. Barrett, and the other is the carcinomatous metastasis in the meninges, in which the carcinoma spreads throughout the meninges setting up a veritable carcinomatous meningitis. Of course, in either case the condition is entirely inoperable.

DR. R. BISHOP CANFIELD: I was interested to see this case of Dr. Barrett's because of the fact that lesions of the temporal lobe have been so difficult to diagnosticate, but have been rendered somewhat

more easy by the work of Pike and Wilson who have determined a very definite reaction to the vestibular tests in cases with lesions in the temporal lobe. They have detailed very definite reactions of the vestibular apparatus to heat and cold in such lesions. Their work has been entirely experimental and has been done chiefly on dogs. They have shown that lesions low down in the temporal lobe interfere with the normal vestibular reaction although the vestibular apparatus itself may be perfectly normal. For instance, a lesion in the lower part of the left temporal lobe is demonstrated when the ear of the corresponding side is irrigated with cold water. In such a case the normal vestibular reaction is demonstrated, while if the same ear is irrigated with hot water the slow component alone of the nystagmus is produced. This, in their opinion, has added another localizing test of considerable importance. The fact that this patient had a bilateral sixth nerve paralysis, of course, rendered this test useless. The eyes were fixed more or less in the median line and neither component when directed toward the outside could be elicited.

This case is interesting also because it casts discredit on the observation usually made of changes in the skull due to increases in pressure. I have in other cases opened the skull when the X-ray picture has demonstrated changes in the skull and have found these changes to be entirely absent. It is most interesting that in this case these changes are seen to be due to changes in the brain.

DR. WALTER R. PARKER: The case is particularly interesting from an ophthalmologic standpoint for two or three reasons. I think possibly I would put first the satisfaction of postmortem demonstration of double sixth nerve paralysis. As a matter of fact, our best postmortem findings rarely demonstrate the cause of bilateral sixth nerve paralysis. As Dr. Barrett has suggested, they are probably due to pressure at the base, secondary to increased intracranial pressure.

The blindness in this case might be explained, it seems to me, from the postmortem findings in a most interesting way. As you already know blindness in cases of brain tumor does not come from the choked disc. It may come on late from the secondary optic atrophy, but one may have a swelling of the optic nerve of four or six diopters with good vision. The blindness might be produced by double homonymous hemianopsia, the lesions in the region of the calcarine fissure on the one side producing a right sided blindness and the lesions on the other side a superimposed left sided blindness.

I would like to add my testimony to that of Dr. Canfield to corroborate his disappointment in the postmortem findings in cases of areas of erosion as shown by the X-ray. They very frequently lead to disappointment.

DR. HARRY B. SCHMIDT: The clinical aspects of this case are very interesting to me from two standpoints. One is that the patient had a tumor at the head of the pancreas, quite large, without jaundice. This was explained by an anomaly of the common duct. An unfortunate accident in diagnosis could have been easily made had jaundice been present. The other is that with such extensive metastases there must have been some involvement of the bone

marrow. Is it known whether the red cells were seen in a smear just before death?

DR. BARRETT: I think there were smears made but not just before death.

DR. SCHMIDT: I should imagine that you probably would have found nucleated red cells in the blood. I never expect to see more metastases and I presume there were many metastases present which we could not see.

DR. BARRETT: I have little to add to the discussion. The other case of carcinoma which we had was metastatic from the breast. Most of the metastatic carcinomas come from the uterus, and especially from the so-called malignant deciduomata. Where you get metastases in the cord they generally involve the bone. However in the brain you rarely get metastases in the bones of the skull, but more in the brain itself.

An interesting point in this case in the questionable character of the information gained from the X-ray examinations.

The interpretation of the plates by the Department of Roentgenology was that there was an erosion of the petrous portion of the left temporal bone. At the autopsy no change in the bones was to be made out. There was, however, a large cystic degeneration of the temporal lobe lying adjacent to this region. Whether or not such a difference from the normal condition of the brain substance would explain this, is a matter of some interest.

DEMONSTRATION OF A CASE OF GUMMA OF THE TESTIS, ASSO- CIATED WITH TABES.

UDO J. WILE, M.D.

(From the Clinic of Dermatology and Syphilology, University Hospital, Ann Arbor, Michigan.)

This patient is shown for the rather remarkable coincidence of an active syphilis in association with tabes. It has long been known as a clinical fact that syphilis of the central nervous system is as a rule unassociated with active manifestation of syphilis in other systems. As a matter of fact, however, I think that the coincidence of the two, is perhaps more common than is generally appreciated. The fact that patients with tertiary syphilis and syphilis of the skin and mucous membranes in general are not subjected to routine neurologic examination would probably account for a large number of cases which remain undiscovered. It is, however, a fact, I think, that tabes and probably too, general paresis, represent exceptions to the rule of this coincidence. I don't recall off hand over four or five cases of tabes dorsalis which were associated with active syphilis demonstrable from clinical manifestations. At autopsy a number of cases of tabes unquestionably show syphilitic changes in the viscera.

The patient here is a well marked tabetic. He came into the Hospital for his tabes. In the routine examination it was noticed that he

had a very large tumescence of the left testis. The organ was firm, tense and painless and it was a matter of conjecture at first as to the nature of the tumor. From the standpoint of differential diagnosis one had to consider the possibility of a tuberculous epididymitis, of a traumatic orchitis, of a sarcoma of the testis, and lastly of a gumma. We ruled out the various diagnoses other than gumma entirely objectively. Against a tuberculosis was first of all the patient's general condition and advanced age and the absence of tuberculosis elsewhere, which of course, were merely presumptive, but objectively there was no primary epididymitis here. The testicle was enlarged as a whole, a massive, firm tumor which had none of the clinical symptoms associated with tuberculosis of the organ. The diagnosis of sarcoma had next to be considered. Against it was the lack of infiltration of the surrounding tissues, the freedom of the organ within the scrotum itself. Difference in texture I think is a very important point differentiating sarcoma from gumma. The sarcoma represents the hardest tumor with the exception of teratoma, that we have in the testis. They are of extremely rapid growth, reaching the size sometimes as large as a child's head in a short time, always associated with cachexia. Carcinomata had to be considered also. These are excessively rare in this organ and only came in for consideration very briefly. The diagnosis of gumma rests upon involvement of the organ itself, its painless character and its very characteristic rubbery feel, and the absence of any other assignable cause for the tumor.

Under treatment for general syphilis the organ has decreased in size about half, but as frequently happens in these cases, softening has occurred, and with this central softening a gumma of the skin has appeared on the surface. The organ has remained painless. It is now, however, perfectly possible to feel the outline of the organ.

The question arises as to the further therapy of this case. It is now a mass of necrotic tissue. A priori it is bad surgery to operate upon luetic processes provided one does not know ahead of time that they are luetic. The organ is functionless and represents a focus of further dissemination. It is now discharging and the organ should be removed with the full knowledge, however, that one is removing a gummous mass. With the surgical treatment the patient should be subjected very vigorously to anti-syphilitic treatment.

The case is shown on account of the asso-

ciation of a neurologic late syphilis, tabes, with an active syphilis of the testis.

DISCUSSION.

DR. CARL D. CAMP: There is probably nothing I can add to Dr. Wile's presentation of the case further than to say that the case is an ordinary advanced tabes from a neurologic standpoint. There is one point of interest in the diagnosis which might be mentioned. It is well known that in tabes deep sensibility is diminished or lost. One of the signs of tabes is the possibility of firmly compressing the testicle, or eyeball, without producing pain. It is therefore quite possible, and I have seen it occur, to have a traumatic inflammation of the testis, or a tumor of the testis which is absolutely painless in these cases.

OBSTETRICS AND GYNECOLOGY AMONG THE ARABS.

H. G. VAN VLACK, M.D.

(University of Michigan, 1910, Mason Memorial Hospital, Bahrein, Persian Gulf.)

These remarks refer chiefly to the Arabs in and about the Bahrein group of islands in the Persian Gulf but in a general way they apply to all Arabs. In fact they are true of all Mohammedan communities which are governed and guided by the Koran and the traditions of Mohammed. The slight differences are caused by the varying interpretations of the book and the traditions based upon them.

Since in a Moslem community a physician only sees the lower grades of Arab women, very little of this paper is based upon personal experience but upon data furnished me by Mrs. G. D. Van Puersen and others of the Arabian Mission to whom I am profoundly grateful.

Arab women marry very young, many when mere children. This state of affairs is due to the fact that the Arabs are so amorous and lacking in self control. The more usual age for the Arab girl to be married is from ten to fourteen years. If the girl is not married before her first menstruation, her mother sees to it that she is married as soon after as possible. Those who marry very young girls are supposed to have no sexual relations with their wives until after the first menstruation. That they often do not wait is proven by the fact that many young wives bring forth their first children before they have ever menstruated.

Since all males are forbidden to see or treat women, obstetric work naturally falls to the lot of women, which accounts for the strong position held by the Arab midwife. She is of necessity an old woman. From the samples I have seen, they are the dirtiest and ugliest of the Arab women, who are not cleanly at

their best. One of the things for which they have quite a wide reputation is the causing of abortions in the case of illegitimate or undesirable pregnancies. There is quite a flourishing trade in camphor gum here due to the fact that this is a favorite remedy for bringing on an abortion.

The lying-in room selected for the Arab woman is a dark, unused chamber without windows. The reason for the selection of such a room is that the confinement is supposed to render the room unclean hence unusable as a prayer room and unfitted for the entrance of a man. The confinement takes place on the dirt floor, over which is spread a bit of gunny sack on top of which is placed sand to catch the blood and discharges. This is the Arab accouchment bed. The patient has on her oldest and dirtiest dress. All through the confinement they use only dirty rags and since the Arabs have still to learn the value of cleanliness, the great wonder is that the mortality is not greater than it actually is.

The preparatory treatment consists of a copious draught of a vegetable purgative tea, composed largely of senna, but which may contain any or all of the many dried herbs found in the local bazaar. A portion of the Koran is tied about each thigh as an aid in the delivery and to insure that the child will be a true believer. The Jews in this vicinity put a bit of the Taurat about the thigh or leg for the same purpose. The midwife palpates the abdomen to determine the position of the fetus. They never examine per vaginam or the mortality would certainly be much higher, since the Arab midwife has absolutely no conception of cleanliness. If it is a case in which the midwife wishes to extort an extra fee, she says that the position is abnormal. Then she proceeds to manipulate the uterus through the abdominal wall or steps on the patient's back to cause the fetus to assume the correct position. The midwives also use this back massage to hasten the labor. However, it must be said to the midwife's credit that she is often able to do a version. All manipulations are done under the covers since under no circumstances is it permissible to expose the patient.

The delivery is accomplished in the sitting posture. The patient sits on the floor during the pains, the knees drawn up, one woman holding each knee, and one at the back to press during the pains. Between the pains during all stages of labor the patient is made to walk. No instruments are used, in fact nothing is introduced into the vagina. So every patient who

cannot be delivered without aid has to be taken to the "Frankee," foreign doctor, or the mother and child are allowed to die. Too often the latter course is chosen rather than go to the hated foreigner. The cord is tied with any old bit of rag that may be handy. It is cut with an old pair of scissors that have passed their day of usefulness. The cord is cut and tied about four to six inches from the body of the child as soon as the latter is born. Then a very tight bandage is tied about the abdomen of the child and it is wrapped up tightly in swaddling clothes. The mother then has a tight bandage placed about her abdomen to keep the uterus contracted. The placenta is usually delivered while the patient is standing. If the placenta is adherent or slow in being delivered, the patient lies down while the midwife stamps on the abdomen to hasten matters. Let it be remembered that all this happens on the floor and dirty sand where the blood and excretions have fallen. The placenta is delivered into the sand, no basins being used. When this is completed, the gunny sack with the sand and excrements is picked up and dumped on some refuse heap. It is seldom that they have to go far to find such a place as they are frequent and almost invariably within the town limits.

As soon as born the child is wrapped tightly in some black cloth to keep away the "Evil Eye" or devil. They generally put on a bit of green or yellow rag to keep away any infection from the eyes. If the baby's eyes become infected, (not by any means a rare thing), they use the mother's milk as an eye lotion. Better still if the cord has fallen off, it is soaked in a two ounce cup of water over night. The afflicted eye is then washed in this lotion which is said to be a sure cure.

According to the Arabs the water in which the baby is first bathed has great power. The young bride pours it over her head to insure that she will conceive. If she has been married some time without offspring, she drinks the bath water whereby her barrenness at once passes away and she becomes pregnant. Among the Arabs if the wife does not become pregnant it is the woman's fault. It never occurs to them that the man may sometimes be at fault although syphilis and gonorrhea are very common.

The treatment of the puerperium is most original and interesting. During the first twenty-four hours after confinement every Arab mother is called Mariam i. e. Mary, mother of Jesus, and her first food is dates. The reason for this is that according to Moslem tradition, Mary after her confinement found that she was

hungry. She looked up and saw only a bare date palm, as it was not the season of dates. But behold immediately as she hungered ripe dates fell from the tree. These dates are given but once and that immediately after delivery. The second day she is given a large bowl of astringent tea, made of the many kinds of herbs to be had in the bazaar. This is supposed to aid in the drying up of the secretions. The first ten days the patient is given absolutely no water to drink. Not even if she has fever is she given any fluids with the exception of one cup (2 ounces) of Arab coffee daily, which coffee is the blackest and bitterest of all coffees. Also a very little rice is given. The "Salt Treatment" commences on the first night and lasts until the tenth night if the patient is unfortunate enough to live through until that time. There is inserted into the vagina a solid piece of rock salt, which has been filed so as to fit snugly. The midwives keep an assorted stock of these on hand ready filed in various sizes and shapes. In the more difficult cases solid sticks of alum are used in place of the salt. The sufferings of the patient can only be imagined when these violent astringents are introduced into the raw and lacerated vagina.

According to the Arabs this "Salt Treatment" is necessary to prevent infections and bad odors common to the very damp climate of the Bahrein Islands. The Arabs have a great dread of odors, and believe that most diseases are due to bad odors getting into the body. If a patient has a wound he will plug both nares with bits of rags, insisting that this will keep away the odors and thus prevent an infection. But the real reason of the salt treatment is that the husband demands that all vaginal secretions be dried up as soon as possible. Then if one probes still deeper into the Arab mind the most important reason of all will be found. They insist and use this treatment so that the vagina will not be relaxed as a result of the pregnancy and delivery, and the Arab's sexual passion fail to be gratified. After forty days the husband examines the vagina by full daylight. Twilight or candle light will not do. The vagina must be absolutely dry and pale pink in color or he will divorce his wife. If the woman passes inspection the husband is willing to cohabit with her. Those who have many wives wait the forty days but the less fortunate will not wait but demand the inspection before the set time.

This "Salt Treatment" is not confined to any one of the Arab sects but is common to all Arabs about here although it is not used by the Persians or the Jews. As far as I have been

able to find out it is only employed in and about the Bahrein Islands. It is reported that it is not found among the Bedouins, but I am told that it is used by some of the people in the interior, the sheiks especially employing it to increase their sexual pleasure.

As a result of this treatment the Arab women here very seldom bear but one child, while the Persians and Jews have large families. The reason for this is very apparent since atresia of the vagina is the general result of the "Salt Treatment." As the vagina becomes more and more closed, menstruation becomes more and more difficult. The pain and backaches increase every month, while the blood diminishes in amount if she menstruates at all. This process goes on until a tumor appears in the abdomen or the pain becomes unbearable and the patient seeks relief. In some cases rupture into the abdomen occurs; less often into the rectum or bladder. Death is a common ending. The midwives spoken of above sometimes operate for the relief of this condition according to the following method: They use a long hand-forged iron nail, which is forced through the scar tissue into the mass, if the thrust is lucky. Many times it goes into the bladder or into the rectum. If the patient dies "maketuub," it is written, it had to be so. If the patient gets temporary relief, the midwife takes the glory.

The Arab women of the higher social circles do not often come to men surgeons. This is especially true in all complaints peculiar to women, so the distension arising from the vaginal atresia is allowed to go on until the uterus ruptures. Ruptures into the rectum or bladder do not give relief for long. However, a goodly number of slaves and those in the lower social circles do come to us with all degrees of atresia. For convenience the following divisions may be considered:

1. Those having only the cervix closed.
2. Those having the cervix obliterated, the top of the vagina being a blank wall of cicatricial tissue.
3. Those having a part but not the whole of the vagina obliterated.
4. Those having the vagina totally obliterated up to the labia.

In our experience those of the third class are the most common, while those of the second class have proved to be the most difficult to cure by operation. The scar in these latter cases seem to be most dense and the former lines of the vagina or cervix most difficult to follow. In those of the third and fourth classes the former direction of the vagina is quite

easily followed, once the deep layers of cicatricial tissue have been passed. The cervix is usually unrecognizable. When the mass, the distended uterus, has been reached it is easily pierced and opened with a pair of dissecting scissors giving exit to old menstrual blood of a dark brown color of the consistency of apple butter. The size of the tumor depends upon the length of time the condition has existed. We have had them varying in size from that of an orange to that of a five or six months' pregnancy.

The following are two typical cases:

(1). Arab woman aged about 18 years. Has had but one pregnancy, child living. Following the delivery of the child the "Salt Treatment" was used. Since then she has menstruated but once or twice, some ten months after the delivery. Has had no symptoms of pregnancy. Since the last menstruation there have been cramping pains of increasing severity recurring at the time each menstruation should have taken place. Husband refused to allow operation or even an examination.

(2). Slave woman. One child, "Salt Treatment" used. Has menstruated four times since this pregnancy with decreasing blood and discharge while the pains have increased. Now no discharge at time of period, only pains constantly increasing in intensity. She came during one of these paroxysms, suffering intensely and ready to undergo anything to be rid of her pain.

Examination revealed a tumor the size of five months' pregnancy. Vagina was only one inch in depth, crossed at the top by many bands of cicatricial tissue. Even the walls were of scar tissue in place of the vaginal epithelium. No trace of the cervix to be found.

Operation.—Chloroform anesthesia. Retractor inserted and heavy weight attached. Vagina opened at the most superior point. Opening continued by blunt dissection with scissors until the mass was reached. During the operation the assistant pressed down on the mass. During the dissection great care had to be taken not to open the bladder or rectum. Mass opened by the points of long scissors. The usual "apple jelly" content came out in great abundance. Uterus completely emptied and irrigated with hot boric solution until the return flow came back clear. A large sterile self retaining glass douche nozzle introduced and left in place to prevent the walls of the canal closing again. Tube left in place twelve days, the patient being given a daily douche through the tube. Since the patient passed from under

observation after the twentieth day, it is too early to report on the permanency of the cure in this case.

As I have been here only a year it is too early to report the results of such operations. I can only say that our methods of keeping the opening patent are unsatisfactory. To make a permanent cure there must be devised a better method for keeping the new vagina and cervix patent.

DISCUSSION.

DR. REUBEN PETERSON: I may say in explanation that Dr. Van Vlack, as most of you know, is a graduate of the University of Michigan in the class of 1910. He was sent to Busrah by this University which maintains a mission there. He sent me this paper for publication and it seemed so interesting that I have taken the liberty of reading it to the Society. It is also interesting because just at this time Busrah and the region thereabout is the seat of the war. I don't know how extensively it is affecting Dr. Van Vlack and his work. Just now he is not at Busrah but at the Mason Memorial Hospital at Bahrein.

In reality the condition that follows this "salt treatment" referred to in the paper is practically what you see in congenital absence of the vagina, in atresia of the vagina. I quite agree with Dr. Van Vlack that it is a difficult condition to cure. It is not so difficult to make a temporary artificial vagina and reach either the cervix or the uterus, or to dissect up to the peritoneum where the uterus is absent, as it is to keep the vagina open so that it can functionate. We have had a number of cases in the clinic of absence of the vagina, and I have tried various operative methods. We had one case that approximated the condition he speaks of. This was a girl where the upper part of the vagina was absent. When she was fifteen years old she had her first attempt at menstruation but no menstrual flow. When she entered the Hospital the uterus was distended to about a four or five months' pregnancy. It was extremely difficult to dissect up from below, so in that case I opened the abdomen and found the uterus and the tubes distended with the menstrual blood. Aided by the assistant's hand within the abdomen I dissected up between the bladder and rectum until I reached the distended uterus, punctured it with the scissors, as Dr. Van Vlack has described, and then kept it open until the menstrual blood had drained away. We performed a secondary operation by the flap method, taking the flaps from the labia and skin adjoining the labia and lining the artificial vagina with these flaps. The operation was not entirely successful. I kept track of the case for several years but I don't think the operation was entirely successful, although she menstruated for one or two years. The trouble was that the artificial vagina contracted until there was only a small opening.

We have had a number of other cases of absence of the vagina. In two or three of them we have dissected up between the vagina and the rectum where the uterus has been absent. In one of them I used the same flap method. This was not satisfactory, owing to the difficulty in attaching the flaps

to the upper end of the vagina, and the vagina contracted down considerably. In one case I finally decided to try using the intestine to line the artificial vagina. This case I am going to report later before this Society. Briefly, however, I will say that I used the small intestine, making a lateral anastomosis and using a loop of the intestine for the artificial vagina after dissecting up between the vagina and the rectum. The classical operation as described by Baldwin is to bring down the loops, attach them to the artificially formed vagina and after it is fixed there, to cut the septum between the loops of the bowel. The trouble was that although apparently the loop was long enough to come down it was found after the anastomosis that it was impossible to pull the loop to the vulva without putting too great tension on the bowel, so that I was forced to use only one loop of the intestine. The patient made a good recovery and the operation has been a fairly successful one. The only trouble has been that there was a stricture where the intestine passed through the peritoneum. I dilated that for some time in the Hospital. The patient subsequently married and was here about a month or six weeks ago and is fairly well satisfied with the results. Still I have felt that this is considerable of an operation to perform upon a woman who is not married. I think it is dangerous even though your anastomosis may be very carefully performed. So in a private case that I have had recently I have adopted the suggestions made by an old practitioner of this State, Dr. Charles Shepherd of Grand Rapids, who reported before the State Medical Society about twenty years ago two cases of atresia of the vagina upon which he had successfully operated. He dissected up between the vagina and the rectum and then kept the opening patent by means of a glass plug. In this case which I have under treatment now I have adopted the procedure because this girl was not married and not even engaged to be married and I didn't think I was justified in exposing her to the risk of an anastomosis. The operation was performed about six weeks ago. The vagina has been kept open by a vaginal douche plug. The cicatricial tissue is gradually creeping in and I think the result will be satisfactory. If that is so, I think it is a much better and less dangerous operation than the other.

As far as conditions are concerned, these cases of absence of the vagina, in whole or in part are quite similar to the cases reported by Dr. Van Vlack where the atresia of the vagina resulted from caustics. While it is comparatively simple to reach the uterus distended by menstrual blood, the new vagina, thus formed, will soon close unless lined with mucous membrane or skin. The latter has a tendency to contract no matter how well the flaps may be inserted. In the cases referred to in the paper there could be no objection to making use of the intestine to line the new vagina but one does hesitate to use the procedure in the case of a young woman who may never be married.

THE OCCURRENCE OF EPILEPSY IN THE MEN OF HISTORY.

HAROLD W. SHUTTER.

From the medical point of view the study of biography is difficult. It is and has been the custom of biographers so to interest themselves in the social, political and philosophic aspects of their subjects that the pathologic deviations of mind and body have been largely overlooked. Added to this is the fact that the more definite concepts of medicine, neurology and psychiatry are of a relatively recent origin.

Biographic literature still contains much of the charlatanism, superstition and ignorance of the past which, with the apparent aversion of most biographers to consider the medical aspects of their subjects, causes the chief difficulty in any individual case. One must, therefore, because of the general indefinite information as to pathology to be found in most biographies, turn, in an objective manner to the autobiography or literary production of the individual, and combine information found there with that from official records and the memoirs of his contemporaries.

Epilepsy was recognized before the time of Hippocrates. Hercules, Cambyses and so many other characters of mythology and early history are supposed to have been epileptic that it is still occasionally called the sacred sickness. Lucretius a Roman poet describes accurately a grandmal attack in his poem on the epileptic.

Of late, there is a growing tendency among neurologists to consider epilepsy only as a symptom and one notes the frequent use of such terms as the epilepsies or epileptoid psychoses. These expressions include the typical grandmal petit mal and Jacksonian types, plus the host of allied conditions or equivalents, all having in common as their origin, irritation arising from or reflected from the brain. In studying such epileptics as are of interest in this paper one is not so much concerned in the attacks themselves, beyond the possibility of diagnosis, as in pre- and post-convulsive stages, the equivalent attacks and the mentality of the individual between attacks.

The pre-convulsive stage or aura manifests itself in symptoms of the motor, sensory, vasomotor or psychic varieties and may continue from a few seconds to several days. The motor phenomena are twitchings of muscles, groups of muscles or entire limbs. Frequently aphasia is present. The sensory symptoms are paraesthesias, formications, numbness, pain, peculiarities of smell or taste and visual disturbances.

Premonitory symptoms in the vasomotor system are pallor, flushes and disturbances of secretion, especially perspiration. Mentally one finds anxiety, timidity, depression and various hallucinations extending through to temporary insanity. One author, after referring to Dostoyeffsky's symptoms, has said that the most common psychic aura is a sudden acceleration of the imagination.

Usually the convulsion is followed by sleep from which the subject emerges complaining of intense headache. In not rare instances the patient passes into a trance-like state spoken of as epileptic automatism in which apparently purposeful movements are performed, the victims even going on journeys, followed later by complete amnesia. Frequently crimes are committed by these individuals and the condition is of great medicolegal interest. Acute mania and transitory delusional states are also found after attacks.

Equivalent attacks are classed by Turner, as follows:

First, psychical attacks consisting of automatic actions, changes of expression, tremors and amnesia; second, mania and impulsions, frequently associated with suicide and homicide; third, dream states; fourth, transitory delusions; fifth, catatonic stupor; and sixth, such symptoms as headaches, pseudo-angina, nausea, vomiting and the like.

Several traits or peculiarities of temperament appear to be common to most epileptics. Egotism, obstinacy, mobility of character and sentimental religious fervor are noted. They are frequently irritable, morose, suspicious and given to great variations of mood. Hypochondria is common. The ability to judge right from wrong seems frequently impaired and they are often subject to dangerous impulsiveness, indecision, apprehensiveness and fears.

It has been convenient to group the individuals here considered under the following heads: political and military leaders, religious leaders, and the broad class of philosophers, artists, novelists, poets, dramatists, actors and the like. It is found that in each of the three main classes, certain traits of the epileptic temperament predominate in guiding the direction of activities, while others, although present and prominent, are more latent as regards the course of action. This is well brought out in the political and military leaders where one is surprised to learn the identity of several who at one time or another exhibited convulsions or epileptic equivalents.

Plutarch's Lives contain several interesting

statements concerning the falling sickness of Julius Caesar. The material for Shakespeare's play of that name came from North's translation of Plutarch, particularly the lives of Brutus, Cassius and Caesar, and from literary interest one may well consider the tragedy with the biography. Much is made in the play of the convulsive attacks and the changing mentality of Caesar, all of which has its foundation in Plutarch. In the first act you will recall the attack in Spain and a second while swimming in the Tiber, also Casca's description of the refusal of the crown, at the end of which he says: "He fell down at the market place and foamed at the mouth and was speechless," to which Brutus replies: "'Tis very like he hath the falling sickness." In North's translation one finds the following description of Caesar. "For concerning the constitution of his body, he was leane, white and soft skinned, often subject to headache and otherwhile to the falling sickness: (the which tooke him the first time in Corduba, a citie of Spayne). He yielded not to the disease of his body, to make it a cloke to cherishe him withall, but contrarille tooke the pains of warre as a medicine to cure his sick bodie, fighting always with his disease," etc. One also finds reference to Caesar's attack before the battle of Thapsus, he at that time being carried to the rear where he lay on a cot until the symptoms subsided. Suetonius, a Roman historian, is also authority as to Caesar's condition and mentions two attacks while transacting business. Dr. Gervinus, a German, in his "Commentaries of Shakespeare" calls especial attention to the changes in Caesar's mentality as brought out in the play, and having their basis in the statements of Plutarch. He notes how Caesar became superstitious, suspicious and apprehensive. Where his former boldness had carried projects to completion his present indecision and doubt cause their failure. Moulton in his Shakespeare as a dramatic artist says. "Assassination is a less piteous thing than to see the giant intellect, by its very strength unable to contend against the low cunning of a fifth rate intriguer." If one takes this statement, remembering that suspicion, superstition, apprehensiveness and indecision are frequent symptoms of epileptic dementia, one has, I think, an excellent key to the tragedy. (3, 10, 11.)

The Claudian Julian family which followed Caesar is of interest chiefly as a study of heredity and degeneracy. Caligula, Germanicus and Britannicus were epileptics and Nero

is said to have had the epileptic tendency. (See Ireland "Blot on the Brain.") (5, 16.)

Another family which challenges the attention is that of Peter-the-Great. Ireland says that it was probably through the custom of selecting the queen from the most beautiful of the peasant girls that degeneracy came into the family. Feodor, a half brother of Peter was weak minded, Ivan imbecilic and epileptic. Sophia, an own sister, was extremely cruel, and Peter, says Moreau, suffered from nervous attacks which later degenerated into epilepsy. In the Memoirs of St. Simon one finds the following description of the great Russian: "If he gave thought thereto, his mein was majestic and gracious, else was it forbidding and almost savage, his eyes and face were occasionally distorted by a tic which rendered his expression wild and terrible." Peter, who has been called a singular medley of self sacrifice and tyranny, humanity and cruelty, in temperament falls well into a class whose egotistic obsessions have force and ability enough behind to give them power. Of his six sons, five died in childhood, the sixth was put to death by his father. (1, 5, 6.)

Mignet is the authority for the statement that Charles V. was epileptic. The Emperor was easily the most powerful ruler of Europe in his time, and while perpetually absorbed with wars and great enterprises was tried both by good and bad fortune. In some things he was mean and unscrupulous, was subject to fits of melancholy and deeply religious. Mignet after describing the deformity of his jaw and his difficulty of speech states that he is known to have had several fits of epilepsy which later in life took the form of severe headaches. One of his grandsons was epileptic. (2, 12.)

Marlborough from boyhood was subject to periodic attacks of headache and giddiness which affected him (according to his correspondence) particularly about the time of the battle of Blenheim. At 66 he returned to England, where he suffered convulsive attacks. Coxe in his biography, notwithstanding the statements of the Duchess, believes the Duke to have been affected mentally. Nisbet declares that epilepsy reduced the vigor of both his mind and body. A summary of Marlborough's condition is left by his wife in a legal paper written to forestall any effort to invalidate the Duke's will. She mentions the first attack, the recurrences, and his mental condition between attacks. Coxe says: "The Duchess has been criticized for leading her infirm and suffering husband into public view, and exposing to the multitude so

pitiful a spectacle of human inbecility." One daughter died "long afflicted with a tedious disorder which she bore with consummate fortitude and piety." Her extremely religious nature is noted. (2, 13.)

The possibility of epilepsy in Napoleon, after one hundred years of controversy, still continues to raise discussion. Constant in his Memoirs mentions the exhibition of a tic consisting of frequent and rapid elevation of the right shoulder, which those who did not know him sometimes interpreted as a sign of dissatisfaction and disapproval, seeking uneasily wherein they could have failed to please him. Bourrienne, Napoleon's private secretary for sixteen years, declared he never saw symptoms of a general attack. He mentions the tic as extending also to the mouth and lips. One of his feminine admirers describes him as irritable, morose and splenetic from boyhood, domineering, with a disposition alternately sullen and impulsive, and lacking in all consideration for the feelings of others. He had a frightful anger and a winning smile. Nisbet, using Mineval as an authority, mentions the significance of reports of convulsions and the possible relation of the Emperor's greatness to the epileptic habit. Corvisart, Napoleon's physician says Madame de Rémusat described the Emperor's awakening from sleep as "generally melancholy and apparently painful, and that not infrequently he had convulsive spasms in the stomach which made him vomit." The latter condition may have been associated with his gastric disorder, he later dying of carcinoma. Laine, in the *Revue de Deux Mondes*, considers the Emperor to have been a psychic epileptic with gigantic megalomaniacal illusions, impulsiveness and complete absence of moral sense.

Radestock describes a definite hallucination during the Russian campaign. Oppenheim, Radecliff and Clark all mention Napoleon as epileptic. (2, 6, 8, 14, 15, 16, 17.)

Greville's Memoirs of the Reign of Queen Victoria contain several references to the convulsive attacks and failing mentality which came over the Duke of Wellington in the last twelve years of his life. Many times he caused diplomatic circles great concern because of his unwillingness to resign himself to private life. Lyndhurst once said he hoped His Lordship would retire before he became a dotard like Marlborough or a driveler like Swift. Greville, once lamenting the Duke's condition said: "It becomes impossible not to regret that in his seventy-third year and after three epileptic fits he was not permitted to hold himself free from

the trammels of executive government." Wellington's temperament became markedly changed. Irritability, unreasonableness and fits of anger eventually gave way to delusions. On February 9, 1841, Greville says. "The Duke had an attack the other night in the House of Lords and was taken home speechless, but not senseless. It was severe but short and after the stomach was relieved he rapidly recovered." The London Times for September 16, 1862, contains the following article: "Of late years increasing infirmities manifest, though energetically resisted—the treacherous ear (he became deaf) the struggling utterance, and the tottering step—all told their tale, and suggested that the greatest man of his age might live to illustrate the decay from which no genius is secure." (2, 39).

In summarizing the prominent characteristics in the temperament of all these men, one is impressed with their resolute, self confident attitude toward surroundings. Extreme egotism, impulsiveness and a relentless nature are common to most of them. To a large extent religiosity and superstition are not marked. Utter disregard of morals is found in the inner lives of a number.

The two most illustrious religious celebrities who have been christened epileptic by tradition are Mohamet and St. Paul. In an interesting article written by Howden in 1872 he says: "Irritability, suspicion, impulsive violence, egotism and strong homicidal propensities are the most commonly observed characteristics of the insane epileptic; but in strange contradiction with these we frequently find combined a strong devotional feeling, manifesting itself, may be, in simple piety or in decided religious delusions." Renan in his book on the apostles says of Paul: "His health was always poor because of a strange infirmity which he calls a 'thorn in the flesh,' and which was probably a serious neurosis. His moral character was anomalous, naturally kind and courteous, he became ferocious when excited by passion. As an enthusiastic leader of the Pharisees he was among the fiercest persecutors." With permission of the high priest he set out for Damascus to arrest the leader of a band of Christians quartered there. On nearing his destination he suddenly fell to the ground, unconscious. An hallucination followed in which Christ appeared to him. For three days he neither ate nor drank, meanwhile suffering from fever, the latter a term used indiscriminately in the Bible to indicate sickness. During Paul's convalescence he experienced hallucinations

from which he emerged converted. Renan in his Life of Paul considers his gospel to be illogical in several places. It was, however, the bold spirit of that disciple which pushed Christianity out to sea, probably saving it from the fate of myriads of other religious cults. Lombroso, William James and Clark of N. Y. mention Paul as an epileptic. (4, 8, 17, 18, 19, 20.)

Beyond a doubt the divine inspiration which prompted Mohamet in founding the religion which bears his name came from his own morbid brain. Probably the best authority on his malady is Sprenger, who has collected most of the available evidence. Muir of London mentions a tradition describing Mohamet's visitations. "Sometimes Gabriel cometh and communicateth the revelations unto me, as one man unto another, and this is easy; at other times it afflicteth me like the ringing of a bell, penetrating my very heart and rendering me, as it were, in pieces, and this it is which grievously afflicteth me." Apparently here one may interpret painful attacks possibly epileptic in origin. Ayescha, his favorite wife, observed the prophet during revelation on a cold day, and when it was over noticed drops of sweat on his forehead. Othman, watching the prophet during a visitation of the angel, marked how his eyes turned first toward Heaven, to the right, and later toward the left and down. The attack was followed by sweating, also by a new verse of the Koran. Other traditions are; that he was found red and unconscious, that associated with his attacks he made strange sounds like the crying of a young camel, significant as the preconvulsive cry. The prophet is known to have been cupped, a treatment used often in mental disorders. Ireland says that the silence of the Mohammedan commentators to assertions by the Greeks of epilepsy in their leader, is some of the most conclusive evidence of his malady. Whether Mohamet was epileptic (most authorities believe he was) or hysterical, one is hardly justified in denying the sincerity of his own belief. (2, 4, 5, 21, 22.)

Lombroso asserts that Dante had epileptic fits, basing his statements on incidents in the "Divina Commedia" in one of which Dante says he fell headlong and lost consciousness.

"He ceased, the gloomy region shook amain,
Still its mere memory bathes with sweat my brow,
Rumbled that land of tears with moaning wind:
A light, vermillion coloured, flashed from Hell;
And wholly vanquished my palsied mind.
Even as a man whom sleep o'ertakes, I fell."

Beyond the statement of Lombroso, considered unwarranted by Hirsch, I have found no authority to consider Dante epileptic. (4, 7.)

History is full of strange religious cults which have arisen endemically throughout all time. Almost invariably these bands have at their head some mental deviate. Frequently epileptic dementia has been demonstrated as the source of their inspiration. Anne Lee, founder of the Shakers was such a character, says Clark, who is also authority for the statement that Joseph Smith suffered from epilepsy. (See article in *Boston Medical and Surgical Journal*, Jan., 1915.) (2, 17.)

The chief things of note about the religious epileptic are the highly developed imagination, the power of leadership and the egotism so marked in their religious sentiment. These men defend their assertions boldly and resemble the military leaders in the manner used to establish their faith. Mohamet by oratory and force was but a few years in winning a large part of Arabia.

Hallucinations and delusions probably reach an extreme in the religious fanatic. Clark, in the article previously mentioned, shows the high degree of development of the imagination in the epileptic, and says: "In time it will probably seem less strange that much of our religious conception of Heaven, which has been fashioned by epileptics out of their unconscious conception of the mother life, should be so satisfactory to the entire human family."

Turning to the third main class here considered: Swedenborg seems to have been peculiar from birth. As a child he had peculiar psychic alterations. Maudsley in the *Journal of Mental Science* for 1869 considers thoroughly the mental condition of the philosopher. He mentions the early manifestations as a child and the probability of their becoming typically epileptic. At one stage in his life he had an attack of acute mania. At 56, Brockner, his landlord in London, found him foaming at the mouth and declaring he was the Messiah in person. He is said to have removed his clothing in the street and rolled in the gutter (an inclination to such exposure is common in epileptic dementia). Nisbet says the outbreak mentioned occurred with an epileptic seizure, and from this period onward Swedenborg's delusions were all of an insane character. The main points in his own description of an attack are: a clamor under the head, rigor, a din in the ears, sleep; shivered later as if the winds rushed together and shook him, communed with Christ, and on coming out wet

with sweat, he said he had been holding communion with the Lord. In his work he demonstrates how his mind struggled to maintain the reality of his delusions. Maudsley, Nisbet and Ireland consider Swedenborg's condition to have been epileptoid in origin. (2, 5, 23.)

Of Balzac, Nisbet says: "At school Balzac had an epileptic seizure which so alarmed his teachers that they urged his parents to take him home." Of singular import however is the fact that similar symptoms are never known to have recurred. Balzac had many of the peculiarities attributed to men of genius. His work, however, was accomplished by an almost brutal mental and physical effort, he working always from twelve to eighteen hours a day. Balzac once wrote to M. Hanska (Sanders' "Balzac") that if his misfortunes did not kill him, he feared they would destroy his reason. Gould in his "Biographical Clinics" throws light on the so-called alarming attack at school by showing that the boy of fourteen had not had a vacation in seven years, had completed "Treatises on the Will," and, unknown to the professors, had read a greater part of the rich library of the college. Knowing this, Gould scoffs at the idea of blaming "pathology" or "heredity" for the boy's break down. (2, 24, 25.)

The grandfather of Alexander Dumas married a full blooded negress at San Domingo. The son of Gen. Dumas shortly before death married a young woman, the mother of Alexander. "The alliance," says Nisbet, "was physiologically unsound, for Madame Dumas was subject to epileptic fits—she had one which attracted public attention at the performance of her son's first play." The author himself never exhibited epileptic symptoms. (1, 2.)

Dostoyeffsky, one of the great trio in the Russian literature of the last century, was undeniably epileptic; and his own disease as interpreted and incorporated in his works makes up a considerable portion of their content. Clark has considered every phase of the great author's malady in an article found in the *Boston Medical and Surgical Journal* for January, 1915. Dostoyeffsky had numerous attacks; several times they occurred at the homes of friends who have since described them. The preconvulsive auræ from his own statements were elaborate and somewhat erotic in type, and, much of the writer's inspiration was received in the moments preceding his convulsive seizures. His first attack came during exile and was followed by a series extending over many years. Dostoyeffsky's mother is described as exalted and epileptic. Clark says, "All the out-

croppings of Dostoyeffsky's egotistic and infantile feelings and ideas in the minor and beginnings of the major attacks, are over and over again elaborated in his novels." It may be added that for the most part the chief characters of his novels are epileptics. (4, 17.)

A very interesting case is that of Byron. "On the evening of February 15, 1824," says Jeaffreson in his book, *The Real Lord Byron*, "while sitting in Colonel Stanhope's room he had his first epileptic seizure in the presence of several witnesses to the effort he made to regain his self command. The attack was sharp, but short, and he seems to have come fairly out of it in twenty minutes. The poet had five fits in three days, and two months later he passed away." The immediate cause of his death was said to be 'a fever arising from a chill.' Probably the end was hastened by the excessive bleeding to which the patient was subjected, the doctors fearing that the epileptic attacks would be followed, as they so often are, by mental derangement. Byron came of weakened stock on both paternal and maternal sides, and the irresponsible, insincere nature of the poet is known to all. "His diary," and one may add, actions, "reflect a destempered mind," says Nisbet. It would be of interest to know whether the convulsion alone or the convulsion and its resulting lethargic state extended over twenty minutes. White says one should always suspect attacks of such long duration, appearing for the first time in men of this age as being due to paresis. (2, 26.)

Gustav Flaubert the French author, is an undoubted case of epilepsy. Gould has well summarized his case in his *Biographical Clinics*, where he says that contrary to the general belief, Flaubert's attacks began early in life. His first definite attack after reaching manhood occurred in Paris and was nocturnal in appearance. One of the peculiarities of Flaubert's malady was the aura in which he experienced a peculiar yellow flame, first before one, then the other eye. This he called his "golden vision." Du Camp cites his friend as a great genius lost to the world because of epilepsy. After enduring the attacks several years Flaubert's memory began to weaken and his nature changed greatly. He became morose, hypochondriacal and sensitive for the most part avoiding the public. (2, 25.)

Tom Sheridan, famous for his "School for Scandal" and the "Rivals" came from a family given to insanity and ne'er do wells, and is said to have become epileptic in the last few years of his life. Nisbet says, "At the age of

66 he was seized with epileptic attacks." In a letter written to his son (found in several biographies) a short time before death he mentioned trouble with varicose veins and 'his secret alarming complaint.' Starnforth in his life of Sheridan says, "After a succession of shivering fits, he fell into a state of exhaustion, in which he continued with but few more signs of suffering till his death. His nature was one of careless disregard for all about. He was thriftless, extravagant and lived with considerable indifference to the usual moral check." (2, 27.)

"Handel," says Lombroso, "was subject to furious and epileptic rage." Late in life after a stroke of apoplexy he became for a time demented. As a teacher he frequently lost all control of his temper and once is reported to have held a prima donna out of the window threatening to drop her unless she sang a passage in a certain way. I can find no mention of convulsions in several biographies. (2, 4, 6.)

Mendelssohn came from a highly neuropathic family. Rockstrof in his life of the composer informs us that he weakened rapidly in the last few years of his life; and during the rehearsal of *Elijah*, his last great work, had many attacks of epilepsy. Henschel in his "Die Familie Mendelssohn" gives a description of an attack at the home of a friend, Mme. Frege. She "found him shivering, with his hands cold and stiff and his head aching violently." He was taken home where the attacks recurred with increasing violence until he died one month later. (2, 4, 28, 29, 30.)

Mozart's mother is reported to have died of a nervous disease associated with convulsions, delirium and prolonged insensibility. (Nisbet). The composer himself died young in a demented condition. During the composition of the *Requiem* he labored under the delusion that he was being poisoned, frequently swooned away and became practically paralyzed. (1, 2.)

Taschereau says of Molière, the great French playwright, "At the time of his early appearance Moliero was held, even in the provinces, to be a comedian of very inferior order, owing perhaps to a hiccough or throat tic leaving a disagreeable impression of his acting on those not aware of its existence." Radestock and Nisbet on the authority of Grimvest consider him to have been epileptic; and the former mentions his losing time from his work because of convulsions and nervous attacks.

Rachael the great tragic actress was the daughter of a Jewish rag peddler named Fèlix. She was throughout life of an hysterical nature,

and was subject to fits. (Nisbet.) Describing her attacks she said: "Sometimes I fancy that night is suddenly falling and I feel, as it were, a great void in my head and in my mind. Of a sudden all the light goes out and your poor Rachael quite ceases to exist." Tuberculosis was the cause of her death at 37. (1, 2, 31.)

Paganini the Italian violinist of the early last century suffered from childhood with convulsive seizures. Catatonic attacks are said to have kept him in a stupor for hours at a time. Radestock says that the exhaustion which overtook Paganini after a difficult program was similar to that following an epileptic convulsion, and one may add, was probably hysterical in origin. (1, 2, 4.)

Epilepsy, convulsions and epileptic equivalents have been attributed to many others among the greater men of history, but in many cases one is able to prove the nature of the attack to be other than epileptoid in origin, or else sufficient evidence cannot be found to warrant the assumption of epilepsy. The convulsive attacks attributed to Dickens, if one is to believe his friend Forster, were very painful and resembled ordinary cramps. Apparently localized on one side, the absence of other symptoms of epilepsy would lead one to suspect a local lesion of that region. Gould is probably correct in attributing Dean Swift's symptoms to a lifelong ametropic condition of the eyes. Gould also discredits any statements as to Swift's trouble having originated in the labyrinth of the ear. (Gould's Biographical Clinics.) (2, 25, 32.)

Lombroso says Newton suffered from a form of vertigo related to epilepsy. Radestock mentions the severity of his condition which was followed late in life by dementia.

Bevenuto Cellini the Italian artist has been called epileptic. Undoubtedly he did suffer from hallucinations of sight, but the most interesting pathology of his autobiography is his description of the French disease which he acquired from the "fine young servant girl," whom he had in his employ. No mention of convulsions was found. (2, 33.)

Thackeray, says Antony Trollope in his life of the author, was subject during the last thirteen years of his life to painful spasms which were probably the immediate cause of his death. Beyond this I can find no description of the attacks. (2, 34.)

Dr. Johnson was throughout his life hypochondriacal and haunted with the dread of insanity. One eye was useless and he suffered from hallucinations of hearing. Because of his

disorder he was fretful, impatient, and irritable, but in consideration of his conditions, Boswell says we should not wonder at his peculiarities. Nisbet attributes convulsive spasms to Johnson. (2, 4, 35.)

'Schiller, sickly as a youth, had several nervous fevers, often going into convulsions or fits.' This is a translation from Radestock based on the authority of Emil Palleske. Alfieri, the Italian poet, late in life went into convulsions, says Radestock, referring to the autobiography of the latter. In the English translation of the autobiography, the convulsive attacks must be the severe seizures of gout there mentioned. (4, 6.)

Henry K. White an English poet is considered by Nisbet to have been epileptic. Sir Harris Nicolas in mentioning White's fear of tuberculosis says: "He was not aware that he was generating or fostering in himself another disease little less dreadful and which threatens the intellect as well as life." In another point his biographer says: "He found himself, on his first seizure, too ill to receive his brother." No description of the convulsion was found. White died early of phthisis. (2, 36.)

Blaise Pascal, who discovered the barometric principle, suffered late in life, says Moreau, from convulsions which lasted twenty-four hours at a time. M. Lélut considers his nervous constitution very delicate, he being subject to hypochondria and hysteria. At one time he was paralyzed from the waist down, the paralysis being inorganic in origin. (2, 4, 37.)

One notices on close study of the individuals considered, particularly those suffering from their malady for a period of many years, or suffering acutely for a short time, the tendency for what is probably the same etiologic factor, to manifest itself in disturbances of sanity, as well as to produce the peripheral symptoms of epilepsy.

It must be apparent that from traditional evidence one is unable to say in many of these cases, whether the patient really suffered from epilepsy and its equivalents or whether the symptoms were due to other causes. One questions also in the cases showing convulsions late in life whether or not one should consider them epileptic. Terminal epilepsy is, however, a recognized form of the malady.

In regard to temperament, in the group of philosophers, novelists, and poets one finds a greater variation than in the other two large classes. Independence, highly developed imagination, tendency to hypochondria, egotism and

moral indifference are perhaps the most frequent traits noted.

The question is often asked, Do the etiologic factors in epilepsy have a function in the production of genius? Lombroso, an extremist, believed genius to be epileptoid in origin, and has a large following. Nisbet says: "Occasionally there is a great intellectual activity produced by the epileptic condition, which seems to be caused by a wave of morbid excitement passing over the different cerebral centers." (See *Insanity of Genius*). Others, as Hirsch, would in no way consider the possibility of a psychosis or psychoneurosis being a factor in the production of genius or creative ability.

The study of the men considered has been of interest both from the scientific and the literary point of view. One is able to fully appreciate the productions of an author, poet or artist only on gaining a fair knowledge of the individual himself, after which the influence of mental pathology on his production will be apparent. Unfortunately one cannot consider fully any individual case in an article of this length. The purpose here has been simply to collect some of the facts in the cases of the more prominent men who have at various times been considered epileptic.

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DISCUSSION.

DR. ALBERT M. BARRETT: I have been much interested in Mr. Shutter's paper. It is an illustration of the possibilities open to medical students for doing work somewhat broader than that required in their routine. Casual references to the occurrence of epilepsy in men of historic importance are met with in most treatises dealing with the subject of epilepsy. Mr. Shutter is to be commended for the large list of such characters which he has been able to get together in this paper.

One cannot help but feel that there must be some uncertainty as to the genuineness of the epilepsy ascribed to many of these individuals. The differentiation of attacks resembling those of epilepsy is not easy. Many of these conditions suggest possibilities of hysterical attacks, or, especially in the old, those due to vascular disorders. The significance of these latter conditions, as bearing upon mental development and peculiarities, is quite different from that of an idiopathic epilepsy.

DR. CARL D. CAMP: I have been very much interested in Mr. Shutter's paper. It makes a point which I have often tried to emphasize that with the possible exception of hysteria, there is certainly no disease to which mankind is exposed, which has as much bearing on social life and conditions as epilepsy. Personally I am inclined to believe with Lombroso, that there is a definite relation between epilepsy and genius. One realizes that these men that have been mentioned are not men of great talent. They are abnormal men. I have not studied very deeply into the epilepsies of most of the men mentioned, but I have been interested in the epileptic characteristics of the various Russian writers. In these men one finds internal evidence in their writings that they are epileptic. They have described their feelings and attacks so that one can readily recognize that they knew what they were talking about from personal experience.

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April

Editorials

A CHECK.

Your check sent to your County Secretary before April 15 will cause your reinstatement to full membership if you have neglected to pay your 1915 dues. Prompt compliance is imperative.

CONSERVATION IN GYNECOLOGY.

To what extent Conservation will hold sway in Gynecology in the future, will depend to no small extent on the health education of the public. The numerous pelvic affections to which the female is liable can, in a great measure, be reduced by a systematic public health campaign.

Woman's very mission in life predestines her to rather thickly populate our hospitals and for this reason treatment of her ailments has developed among the physicians two classes, the earlier "radicalists" who were later to be displaced by the "conservatists."

There is no question that in the earlier days of surgery, before the general introduction of the microscope and other modern instruments for diagnosis in our medical schools, too radical measures were adopted to effect a cure. Too many ovariectomies were performed to control menstrual pain, hysteria, insanity and other mental disturbances for which the ovaries were supposed to be the prime disturbers. On the other hand,

too many office treatments by the use of tampons with and without ichthyol or boroglycerine or other drugs to reduce inflammation, absorb tumors both real and imaginary and to hold the womb or adnexia in position were indulged in, where we now know that a simple effective pelvic operation will remove the tumor, restore the pelvic organs to their proper position or repair the lacerations of the cervix and perineum. After which repeated "local treatments" are unnecessary and ineffectual.

Tampon treatment for misplacements in the pelvis is like supporting an unstable building with a prop. So long as the prop remains in place the building has a fair assurance of having the roof uppermost, but once the prop is removed, the old conditions obtain. Even this much cannot be said of local treatment for "absorbing tumors" of the pelvic organs.

We do not hear so much now about the diminution in size of tumors, lessening of "flooding," nor assurance of a general improvement in health with the onset of the menopause as was formerly promised the sufferers by the earlier practitioners; on the contrary, these conditions are at present taken as signals of warning that must not be put off nor overlooked.

Much has been said about the use of the curette. Like any other instrument in the hands of the novice, it is a dangerous instrument, but when properly used there is no other instrument which so effectually aids in diagnosis of cancer of the uterine fundus when combined with the subsequent intelligent use of the microscope. If the average practitioner does not feel himself capable of properly curetting a uterus that is bleeding unnaturally, when no direct cause can be ascertained, it is up to him to send her to someone who can, who will not let the matter rest at a curettage alone but will systematically examine the curettings.

How many surgeons have had to refuse operation on some poor woman who has undergone repeated curettings without microscopical diagnosis which, had it been carried out, would have revealed the nature of the trouble.

The same might be said of lacerations in women past 30 years of age. Every surgeon has found beginning carcinoma of the cervix in the site of old lacerations which might have been discovered early enough to have been cured, had our women been taught to have their lacerations repaired early. To go still farther, the teaching should begin by training the physician to repair the lacerations of the cervix as well as of the perineum at the earliest opportunity after childbirth.

Where secondary repairs are being performed on the cervix, the tissue removed should be subjected to routine, microscopical scrutiny. This of necessity entails much work and added expense to the surgeon but if he is not equipped to have this work done in his own laboratory, there are numerous technical laboratories established in all our cities where this work can be done promptly and at a nominal fee. These laboratories even providing the addressed carrying containers, it being necessary to supply the postage only.

The prime factor in Conservation in Gynecology is knowing to what extent a part may be conserved. This knowledge can only come from experience as an operator and from carefully worked out preliminary diagnosis.

We no longer remove a womb because we are suspicious of cancer. We have means to ascertain positively if cancer be present. Nor are the ovaries removed "*in toto*" because of some obscure trouble. Experiments have shown us that a small portion of an active ovary left in the pelvis will keep the function intact. This is of extreme importance in conservative surgery in the pelvis. For example: One entire tube and ovary may be removed, also the greater portion of the opposite ovary, the remaining tube, which may perhaps be occluded from previous inflammatory attacks, may be subjected to a plastic operation to produce a patent orifice with the result that the woman may later give birth to a full term child.

Observations similar to this are developing a much more conservative view point in recent years than was held only ten years ago.

The whole question resolves itself into one of an "Efficiency Campaign of Health Enlightenment" which includes:

First. The public in questions of its morality, its marriage laws as well as its general health by putting aside foolish pride, by promoting the movement now on foot for public lectures for women which will cover these danger signals fully and intelligently in a manner that may be grasped by all.

Second. The physicians, especially those who have had no opportunity to follow out the newer methods of early diagnosis and treatment by establishing in our universities *free* courses for graduates in at least this one branch, with the hope of ultimately having the same condition for the other branches as well.

F. C. WITTER.

PRESENT ATTITUDE TO GASTRIC CARCINOMA.

It is generally conceded that gastric carcinoma in practically all cases has its origin in the margin of an ulcer. A study of the cases occurring in Ochsner's Clinic for a period of ten years disclosed in all early cases of cancer, a pre-existing ulcer. All of the late cases carried a history that pointed to previous ulcer. Cancer is rare in the duodenum and ulcer relatively common. This is accounted for from the fact that stasis exist in ulcer of the stomach and the ulcer is therefore subjected to constant irritation whereas no stasis exists in duodenal ulcer.

"Clinically it is impossible to differentiate between ulcers that may become cancerous and those that will remain benign" (Smithies). When cancer can be definitely diagnosed clinically, hope of recovery is slight. Only 25 per cent. of such cases are operable and the immediate mortality in resection for cancer is 26 per cent., while that for ulcer is but 9 per cent. It therefore follows that the only effectual way to cure cancer of the stomach is by resecting the ulcer that precedes it. In a given clinic where the percentage of ulcer cases exceeds the cancer cases a larger percentage of cancer cases will be found operable and a larger percentage of the operable cases will recover.

Ulcers of the stomach should always be excised. "The adult population should be warned that attacks of epigastric discomfort aggravated by eating solid food, is sufficient warning for a patient to seek thorough examination at the hands of a competent physician" (Bloodgood).

It will be a long time, however, before this ideal condition, the prevention of carcinoma by excision of the ulcer, will become general and the advanced cases of gastric carcinoma are entitled to such relief as we can afford them.

The only contra-indications for resection in gastric cancer are demonstrable. Metastases in other organs, multiple peritoneal metastases or carcinoma infiltrating the whole stomach. Local glandular metastases, even glands in the pancreas are not contra-indication to resection. In cases where resection is impossible and where obstruction exists at the pylorus, temporary relief should be given by a gastro-enterostomy.

W. T. DODGE.

Editorial Comments

The dividing of the state into sanitary health districts, the enactment of a law providing for the establishment of sane measures for prevention of disease, would be the greatest piece of legislation that our coming legislature could accomplish. That accomplished such a legislative session would go down in the history of our state as having been one of the most valuable sessions of that lawmaking body. The solution of no other problem, the making of other laws, the establishment of other policies, the appropriation of funds for no matter what other purpose would all wane in comparison with such a piece of legislation. Their influence upon the present and future generations, the benefits they might produce, would be all incomparable, less valuable, of minor potential importance to the good, the financial, social and communal uplift that is bound to be felt when scientific health provisions and disease prevention are provided for by our law making body.

It is incumbent upon the medical profession of the state, individually and collectively, to create and foster a lay sentiment that will accomplish and demand the passing of such a law. Each member in his own community and among his own clientele, should grasp every opportunity to point out the value of such a measure and seek to enlist lay interest and support in demanding of representatives the passing of such a law. This educational movement is a responsibility that rests upon the profession and we must not shirk the responsibility.

The coming session of the legislature is still several months distant. Its members, however, will be selected this fall. Candidates are even now becoming active and seeking support; when they come to you, spend an hour with them, enlighten them upon the subject and secure their promise that if elected they will support such a law. Then when they are elected hold them to their promise. Induce the other voters in your community to do likewise. Now, as never before, we should buckle down to work and accomplish the desired end. The profession must remain aggressively active during the next twelve months.

The legislative committees of every county society should early present this matter before their members.

We are experiencing a dearth of papers on purely medical subjects. We are dependent upon our members for our original articles and sincerely hope that we may be favored with some timely, practical papers on the advancements in medical pathology, diagnosis and treatment.

Those whose dues were not received by April first will be placed upon our suspended list. You may be re-instated if you send your check to your county secretary by April 15. We dislike to be compelled to cause you to forfeit your membership benefits.

In our May issue we will publish an editorial

on "Why Every Doctor in Michigan Should Attend the Detroit Meeting of the A.M.A." It is written by one whose advice you have always respected and followed. In the interval do not fail to plan your work so that you may attend the two important medical meetings in this state this year—the American Medical Meeting in June; the Fifty-first Annual Meeting of the Michigan State Medical Society in August.

The movement that is accomplishing a survey of first aid methods throughout the United States with a view of systematizing the work and outlining an accepted technic is most commendable. The Committee is deserving of every co-operation. Dr. J. C. Bloodgood of Baltimore, Secretary of the Committee, will appreciate the assistance, data, records and experiences that are tendered him by those who are devoting a large part of their time to industrial surgery.

The summer problems are almost again at hand. Are you prepared to meet the demands that will be made upon you to carry the artificially fed baby through that trying period? If not tell us the direction in which you desire information and we will endeavor to publish authoritative articles on those subjects.

The advertisers have some interesting announcements in this issue.

To the member sending in the most valuable and interest awakening suggestions for a program for a summer meeting of a County Medical Society, we will present a copy of the most recent standard surgical text book. For the second best suggestion we will present the sender with a recent medical text book. For the third best suggestion the sender will be presented with a recent standard text book on therapeutics. The suggestions must be received by the Editor not later than May 15.

The Indiana State Medical Journal, editorially comments upon and decries the methods that are employed to obtain clinical material for teaching purposes in the medical department of our State University. It is incumbent upon those in charge of the Clinical work at the University to rigidly exclude those who are financially able to pay their home physicians and surgeons for the indicated medical and surgical treatment. The physicians of the state are partly at fault. Frequent instances are on record where the home doctor has sent a patient to Ann Arbor, accompanied the patient, staid through the operation, charged and has been paid for his time and services in doing so by the patient. The surgeon in charge of the clinic was thus imposed upon. Such practices must henceforth be discontinued and only worthy poor patients admitted to the University's teaching Clinics, in addition to those that are provided with medical and surgical treatment at the University by legislative enactments.

A man cannot be a competent surgeon without a full knowledge of human anatomy and physiology, and the physician without physiology and chemistry

flounders along in an aimless fashion, never able to gain any accurate conception of disease, practicing a sort of popgun pharmacy, hitting now the malady and again the patient, he himself not knowing which.

Do not take authority when facts can be had, do not guess when you can know, and do not think a man must take physic because he is sick.

Our daily papers have, to a certain extent, commented upon the enormous mortality of the European war. The comment of Henry C. Emery, Ph.D., Professor of Political Economy at Yale, in a recent issue of *"Collier's"* is rather startling and broadens one's conception. We quote the following from that article: "After the War—What? The January English figures give total casualties for British forces as 549,467 after sixteen months of war. Taking the population of the empire—as 60,000,000, this is less than 1 per cent, of the total population. The white population of the Confederacy in our Civil war was 5,500,000. In three days fighting at Gettysburg they lost nearly 20,000 of the white population, or nearly four-tenths of 1 per cent of the white population,—the South lost four-tenths as many in three days as the British did in sixteen months.

"In France up to January 9, 1916, the English killed were 84,952; the wounded 248,990, or 1 to 3. In our Civil war the ratio was 1 to 2.5 including in killed those 'who died of wounds.' The English figures include those 'dead from wounds and other causes.'

"Estimates of German losses in killed and mortally wounded up to January vary from 700,000 up. At that figure the loss would be slightly more than 1 per cent. of the total population. Suppose it reached the enormous total of 1,600,000 after two years fighting. This would be $2\frac{1}{2}$ per cent. In our Civil war the Union loss was $2\frac{1}{4}$ per cent., the Confederate loss was 4 per cent.

"In the case of all countries to date it may be stated that in numbers engaged or in numbers dead they have not yet approached the record of the Confederacy."

Since most of us have been hypnotized by the appalling aggregates of this war, it is well that we should be jolted somewhat by realizing at the outset that in proportion to population this present war is not producing any greater losses than did our Civil war. Europe is still a long way from being entirely depopulated. Much as we regret the loss of life that is being sustained, it is not in excess of the loss encountered in the wars that history records.

We urge our readers to not only read but re-read Dr. Zinke's article in this issue on "The Value of the Hospital in the Care of Confinement Cases." After doing so ponder over it; discuss it at your next meeting. The demand for better Obstetrics, the exhibition of greater professional skill is becoming more and more insistent and it behooves the profession not to ignore these expressed desires.

The importance of chronic foci in the etiology of systemic disease is becoming to be recognized more and more. Arthritis, cardio-vascular degeneration, chronic Bright's disease, toxemias, laryn-

gitis, asthma and neuritis frequently, if not always, are due to some hidden force. The most frequent sites of focal infection may be divided into the following groups:

1. Recesses or Terminal Pockets; as the Meibomian glands, lacrymal glands, nasal accessory sinuses and mastoid cells; tonsils and adenoids; salivary glands and ducts, gall-bladder and ducts, pancreas and ducts, Fallopian tubes; sweat and sebaceous glands.

2. Tubular structures or ducts; as the gastrointestinal tract and tear ducts.

3. Glandular tissue; lymph glands, tonsils and ductless glands.

4. Serous membranes; as the pleura, synovial membrane and dura.

5. Pathologic tissues; as cavities of teeth, alveolar necrosis and death of pulp, infection about the nails and hair follicles and recession of the gums as pyorrhea.

It is extremely important that we recognize these foci when endeavoring to alleviate or remove their clinical manifestations.

Do it now. Read every advertisement and write to us if you don't see the desired article advertised.

New and Nonofficial Remedies, 1916 edition, published by the Council on Pharmacy and Chemistry of the American Medical Association is off the press and is deserving of acquiring by every member of the profession.

The profession as a whole does not as yet fully appreciate the character, the scope and above all the practical value of this book to the practicing physician. Perhaps it is because its size is so unpretentious, the price asked for it so small and the contents so conservative and unsensational in character that a hasty and superficial examination does not reveal its true worth.

Although it may be an old story to you, we wish to emphasize anew some of the important points in connection with this book? New and Nonofficial Remedies, in the first place, contains descriptions of the newer remedies that are worth the physician's consideration. Being issued by the Council on Pharmacy and Chemistry, which is composed of chemists, pharmacists, pharmacologists and clinicians of the highest standing, it is authoritative; in fact, it is recognized as the standard authority on the newer remedies. When besieged by too persistent detail men, many up-to-date physicians fortify themselves behind N. N. R., taking the stand that they cannot afford to waste time on any preparation which has not gained admittance to its pages.

In the second place, N. N. R. furnishes the physician who has learned how to use it with the answers to a great many perplexing questions that arise in the course of daily practice—and in many instances it is the only book which does furnish this information. What is the distinction between the action of acetylsalicylic acid (aspirin) and that of the other salicylates? What is the comparative toxicity of the various cocain substitutes? What manufacturers furnish Bulgarian bacillus preparations—medicinal foods—organ extracts? What is the iodine strength of the nonofficial organic compounds of iodine compared with the official iodids? What is the standing of pneumococcus vaccine—of the Schick

test—of radium therapy? Look in N. N. R.; it is all there.

We believe that in owning and consulting this work the physician is doing justice to himself and his patients. To that end we urge that our readers send \$1.00 to the American Medical Association, 535 N. Dearborn Ave., Chicago, Ill.

Correspondence

March 17, 1916.

Dr. F. C. Warnshuis, 91 Monroe avenue,
Grand Rapids, Michigan.

Dear Doctor:

At the suggestion of the Chairman of the Medical-Legal Committee, Dr. Tibbals, I am quoting you a statement of a case that I recently tried in Caro, Michigan, and which you may care to publish in *The Journal*, as it shows there are some honest attorneys in the state. It may be of interest to the legal profession to know that there are some lawyers in the State of Michigan honest enough to admit that a doctor has done his duty in the midst of a trial after becoming convinced by the evidence that such was the case. I refer to a case against a doctor in this state which was tried at Caro, Michigan, before Judge Beach two weeks ago, where the plaintiff was represented by the firm of Quinn & Wixon of that city, and the defendant by H. H. Smith of Caro, Michigan, and myself. The Declaration charged that the doctor was negligent in not properly diagnosing a fracture of the tibia and fibula; that is, the doctor stated to the patient that only the tibia was fractured. Negligence was also charged in not properly setting the limb and in consequent treatment.

The evidence disclosed the fact that the doctor had concluded after reducing the fracture under an anesthetic that only the tibia was fractured, but the evidence showed that the leg was properly set, that it was placed in a fracture box and that a weight was attached, which according to the medical testimony was the proper treatment for the fracture of both bones. The testimony further showed that the doctor gave the best of attention to the leg, but yet in spite of everything he could do the bones slipped and both the tibia and fibula at the present overlap and cause a shortening, although there seems to be a bony union at the present time, and the patient has very good use of the limb, although he claims there is considerable pain when he uses it.

During the trial of the case the Attorneys representing the plaintiff evidently discussed the case with doctors, consulted medical works and came to the conclusion that the treatment given by the doctor was correct and that the bad result was due to causes beyond his control, and after coming to this conclusion agreed to dismiss the case, and in doing so made the following statement in open court:

"May it please your honor and gentlemen of the jury. Counsel for the plaintiff now present, Mr. Clark, my brother Quinn and myself, until entering upon this trial, and until this morning, have had no opportunity to talk with the medical witnesses, who

were expected to be called upon the part of the plaintiff. We have, however, during the few days this trial has been in progress, made some investigation, and this morning we have in attendance an expert surgeon, whom we summoned as a witness. Mr. Snow had looked after summoning the medical witnesses—and my opening statement was made in regard to the evidence as we expected to find it. On talking with our own expert this morning, and from our independent investigation of this case counsel has become satisfied that there was no negligence whatsoever on the part of Dr.——— in his treatment of this injury, and while the plaintiff suffers from an injury of the character I described in my opening statement, and, while our sympathy goes out to him very deeply because of his affliction, we want to make this statement to you in fairness and honesty; that we think that that overlapping of the bones that exists was not due in the slightest to any fault upon the part of the doctor; but is to be accounted for by the blind results of fortune and unreasoning chance alone. We wish to say further, that we absolutely exonerate Dr.——— from any charge of negligence in this case, whatsoever. We want to say to this jury, that counsel for the plaintiff, having arrived at that conclusion, feel that honor demands that they shall stand before you and make this statement in fairness and honesty and candor. As the facts, under the law, appeal to them as we now view them, we desire to dismiss this case and absolutely surrender, and we desire to say to you that Dr.——— is fully and completely exonerated in this matter, not only by counsel but by the plaintiff himself, who has learned the truth this morning for the first time.

Of course you understand that this case was brought in the best of good faith, there was no maliciousness back of it, or anything of that sort. We conceived it to be just as we stated it to you in the opening. We find that we were mistaken, and that the treatment he received, considering the peculiar character of the injury, was just what he ought to have received and the only thing that could be done for him under the circumstances. I want to make that plain, for I don't want it to be understood that either the plaintiff or his counsel would urge a matter they did not think to be well-founded. We ask to dismiss this case, with the full exoneration of Dr.———."

To which the writer replied as follows:

If the Court please. I would like, if I may have the privilege, to express the appreciation which I feel, and that I know the doctor must, and that the medical profession will feel.

As Attorney for the State Medical Society to which Dr.——— belongs, I am only too glad to express my appreciation of the fairness with which Mr. Wixon has stated his position and the honor he shows in not going ahead with the case after becoming convinced that there was no negligence on the part of the doctor.

I wish also to thank Mr. Clark for his courtesy and fairness as I know he made some independent investigation to ascertain the true facts, and when he became convinced that injustice was being done he said so. Also I wish to thank Mr. Quinn and all

of them together. It is refreshing to come in contact with lawyers who are as honest as that; it makes you think more of your profession, when attorneys refuse to proceed to try to prove something where they feel an injustice may be done. I wish also to express my appreciation of the frankness of the witnesses. From their statement of the facts Plaintiff's attorneys became convinced the doctor did all that he could in this matter, and the result was something beyond his control. Justice has been done to all parties without the aid of Court or jury."

Court:—

"Gentlemen of the jury.. You have heard the statements of counsel in this—love feast. It is exceedingly gratifying to the court and it only bears out what the court has always held as to the attorneys of this bar—that they were conscientious, high-minded and able to determine for themselves, at the proper time, whether there was a case or not. I think the jury and the audience will go out of this court room convinced that the ordinary slurs against attorneys are not well-founded, that we have an honorable bar, who, when the time comes, and they are convinced, will say to you, they have no case.

"You are dismissed from further consideration of the case."

This only shows that if the physician will exercise such care as is required in the treatment of cases, even though bad results are obtained, that there are lawyers in this state honest and big enough to exonerate the doctor from blame and to further prove the point that I have always argued, that doctors instead of lawyers are the instigators of most of the malpractice cases.

Very truly yours,

HERBERT V. BARBOUR.

Deaths

Dr. J. R. Williams, White Pigeon, died Feb. 17, 1916. Dr. Williams was one of the oldest and best known physicians and surgeons in this section of the country and has endeared himself to all who knew him both professionally and socially. He was County President of the Board of Health and Company Surgeon for the N. Y. C. Railroad.

Dr. J. J. Sweetland, of Constantine, was killed in an automobile accident March 8, 1916. Dr. Sweetland was instantly killed when returning from a professional call from an Elkhart Hospital when his car skidded and overturned pinning the doctor under the engine. His death was a great shock to this community where he was well known and respected by all.

(Constantine Special, March 8).

Last evening residents of this village were shocked when they learned of the death of Dr. J. J. Sweetland, who had been caught beneath his automobile when it skidded in the road and turned turtle about two miles this side of Mottville.

Dr. Sweetland had been in Elkhart where he had

visited a patient at the Elkhart hospital and was returning. He was accompanied by Arthur Morrison of the firm of Morrison & Wood of Constantine. There is a bad turn of the road at the point where the accident occurred and when the car skidded it turned completely over, pinning both occupants beneath the engine.

Dr. Sweetland was probably almost instantly killed. Morrison retained sufficient presence of mind to reach up with a free arm and turn off the gasoline supply, avoiding the danger of an awful holocaust in addition to the tragedy already enacted.

Mr. Morrison was unable to extricate himself from the overturned car and continued his calls for help until finally they were heard at the home of M. Heimbach who lives nearby. Heimbach went to see what was the cause of the trouble and when he found the wreck was unable to release the imprisoned men alone. Dr. Partlow was called and came to the assistance of Mr. Heimbach, when Mr. Morrison was released from his perilous position under the machine. Sweetland was found dead the neck having been broken and death having been probably instantaneous. Morrison was badly bruised, but not seriously injured. The car, a Ford roadster, was a wreck. The accident happened on the south river road.

The remains of Dr. Sweetland were removed to his home in Constantine where Mr. Sweetland had been notified of the accident. The physician's only son, Dennis, was among those who went to the relief of the men under the the car,

This afternoon reports say that Mr. Morrison is badly hurt, but it is expected that he will soon be about. He is suffering from shock and exposure. The two men lay in the slush and snow for something over one and a half hours and the nervous strain undergone by Mr. Morrison when he did not know the fate of the doctor nor of the time he would be compelled to remain under the car, was terrible. The accident happened about six o'clock, and the call of Mr. Morrison was not heard until some time after seven o'clock.

Dr. Sweetland was probably one of the best known of the physicians of the county. He was a man of many good qualities and had surrounded himself with many friends. He has had a particularly large practice and his great heartedness was well known by the people who loved him. His practice was large in the country and he had been in the habit of making many and long drives in following his profession.

Those who knew him best say that Dr. Sweetland was a man of great power and influence and possessed of a kindly sympathetic nature which served him well in the sick room. He has been a practicing physician in this community for about twenty-five years. He was formerly located at Mottville, but about ten years ago he removed to Constantine and since that time has been an active figure in the village life. He was a member of Three Rivers Lodge B. P. O. Elks. The funeral will be held Friday at 2 p. m.—Three Rivers Commercial.

State News Notes

Fifteen thousand visitors are expected during the sessions of the American Medical Association convention, which will be held June 12 to 15. Eight thousand registrations are expected and more than 400 doctors have asked for garage accommodations already.

Affiliated organizations that will meet there at the same time are: American Academy of Medicine, American Protologic Society, American Therapeutic Society, American Gastrologic Society and the American Association of Medical Editors, representing more than 200 periodicals. United States pensions examiners will meet there also and 400 exhibitors of medical books and supplies have applied for space.

Local physicians and surgeons in charge of the convention arrangements are: General committee, Louis J. Hirschman, Chairman; Thaddeus Walker, Treasurer; Ernest K. Cullen, Secretary. Special committees: Finance, Ernest W. Haas; entertainment, Arthur D. Holmes; registration, Frank B. Walker; printing and publication, James H. Dempster; halls and meeting places, Frank B. Tibbals; scientific exhibits, J. Walter Vaughan; commercial exhibits, John N. Bell; hotels, Robert Parmeter; automobiles, Angus McLean.

The convention proper will be preceded by "tuberculosis day" and "public health day." On Friday, June 9, a tuberculosis pageant will be followed by a public meeting, addressed by men who have national reputations as tuberculosis experts. In 200 pulpits of the city the theme will be "Cleanliness is next to Godliness," on Sunday, June 11, that being "public health day."

The convention program includes: Monday, receptions and banquets; Tuesday, alumni associations; Wednesday, reception by President of the Association; Thursday, Dr. and Mrs. H. N. Torrey will entertain at their Clairview estate, Grosse Pointe Farms; vaudeville performance and concert by local members of the profession; Friday, 1,000 delegates to Ann Arbor by special trains to be guests of the University of Michigan; other delegates to Mt. Clemens and on river and lake excursions.

No delegate wearing the official button of the convention will be allowed to walk, as every Detroit physician has placed his car at the disposal of the convention and fleets of motors will patrol the streets. Boy Scouts will act as guides. The feminine guests will be entertained by women's clubs.

The house of delegates, which transacts the business of the convention and elects the officers, will meet in the Wayne County Medical Society building, 33 High street, east. Scientific meetings, divided into 16 working sections will convene in various places.

Health officers and others interested in the activities of Boards of Health will secure much valuable information if they secure the annual report of the Department of Health of Jackson as compiled by Dr. C. G. Parnall, Health Officer of that city. The report redounds to the credit of Dr. Parnall and reveals his capability and efficiency as a health officer. Further, the report exemplifies what may be accomplished by an active local health organization. Jackson may well be proud of its Department of Health.

Health conditions will be linked with nearly every phase of the problems of charity and correction to be considered at the forty-third annual meeting of the National Conference of Charities and Correction at Indianapolis, Indiana, May 10 to 17. One section, that on health, will be devoted entirely to a discussion, by physicians, of the part the medical practitioner and surgeon may play in social work.

The Tri-County Medical Society is planning a Clinic Day at the Mercy Hospital to be followed by a banquet in the evening. The date selected will probably be the first week in April.

The proposition of establishing a physician's collection bureau in Battle Creek has been deemed impracticable by the Calhoun County Medical Society.

Dr. Henry Baird Favill of Chicago, Chairman of the Council on Public Health and Education of the A. M. A., died suddenly while visiting in Springfield, Mass.

Dr. Thomas J. Gruber, formerly assistant superintendent of the Lakeside Hospital, Cleveland, Ohio, has accepted the position of Assistant Superintendent at Harper Hospital.

President Rodman, of the American Medical Association died in his home in Philadelphia after a two days illness from pneumonia.

The Fifth Annual Meeting of Alienists and Neurologists of the United States will be held in Chicago, June 19 to 23, at the La Salle Hotel.

Dr. John Wenger, completing his internship in the U. B. A. Hospital at Grand Rapids has located in Coopersville.

Governor Ferris has appointed Dr. Frank W. Shumway as a member of the State Pardon Board to succeed Dr. J. Brown, of Battle Creek.

The Amphidrome at Houghton has been secured for holding the several sessions of our annual meeting, August 15, 16 and 17.

Dr. Reuben Peterson of Ann Arbor was the essayist at the March 22 meeting of the Kent County Medical Society.

Dr. V. C. Vaughan, Sr. will deliver the dedicatory address of the new U. B. A. Hospital on April 1st.

Dr. Foreman, of Pullman, has removed to Three Rivers.

Dr. H. Reye, Pathologist at the Pontiac State Hospital, has resigned and will locate in Detroit.

Dr. L. E. Clarke, of Otsego, has moved to Detroit and opened an office at Highland Park.

Dr. A. H. Edwards has been appointed city physician for Grand Rapids.

Dr. and Mrs. W. T. Dodge, of Big Rapids, spent the month of March in Florida.

Dr. Carl Weller, of Ann Arbor, has been tendered the position of Pathologist at the Mayo Clinic.

Dr. C. H. Barber has been appointed city physician for Hastings.

Dr. C. V. High, Jr. has located in Cadillac.

Dr. B. H. McMullen, of Cadillac, spent three weeks traveling through the South.

Dr. H. W. Plaggemeyer has been elected a member of the Urological division of Harper Hospital.

Desirable openings for practicing physicians exist in Baldwin, Davisburg, and White Pigeon.

County Society News

BAY COUNTY

On February 28, Dr. B. D. Harison will be with us and read a paper on "Medical Education and State Regulation of Medical Colleges.

On March 13, Dr. Hewlett of the University of Michigan will be our guest. We will have a clinic in the afternoon at Mercy Hospital followed with a dinner at Elks Temple. Dr. Hewlett will be the speaker of the evening. Saginaw and Midland counties have been invited to attend.

We meet every two weeks and average about twenty-five members to a meeting.

FRED S. BAIRD, Secretary.

EATON COUNTY

Second regular meeting of the Eaton County Medical Society was held at Charlotte, March 30, 1916.

Morning Session—Held at Hospital, East Seminary street at 10 a. m.

Clinic,

Dr. W. H. Riley.

Afternoon Session—Held at the Court House, Supervisors' Room, second floor at 1:30 p. m. sharp.
SCIENTIFIC PROGRAM.

1. "Hysteria."

W. D. Newark, M.D., Charlotte.

2. "Syphilis of the Nervous System,"

W. H. Riley, M.D., Battle Creek

LENAWEE COUNTY

At the meeting of the Lenawee County Medical Society, on the 14th of December the following officers were elected for the ensuing year.

President—Dr. Geo. Lochner, Adrian.

Vice President—Dr. W. S. Mackenzie, Adrian.

Secretary-Treasurer—Dr. Leo Stafford, Adrian.

Member of Medica Legal Board—Dr. North of Tecumseh.

Representative of County to State Convention—Dr. Howland.

W. S. MACKENZIE, Secretary.

ST. CLAIR COUNTY

The regular monthly meeting of the St. Clair County Medical Society was held at the Elks Club, February 24, 1916 at which time Dr. Eggleston of Battle Creek read a very interesting paper on Intestinal Stasis.

At the close of the meeting a vote of thanks was extended to Dr. Eggleston. A large attendance was present.

W. RYERSON, Secretary.

Book Reviews

CLINICAL STUDIES IN THE RELATIONSHIP OF INSANITY TO CRIME. By Paul E. Bowers, M.S., M.D., Formerly A. A. Surgeon United States Public Health Service; Formerly Junior Assistant Physician Government Hospital for the Insane, Washington, D. C.; Physician in Charge Indiana Hospital for Insane Criminals and Indiana State Prison Hospital, etc., etc. The Dispatch Print, Michigan City, Indiana.

In the "Preface" to these studies, the author declares that "every year society is unjustly sending to prison hundreds of insane and feeble minded persons who, in the course of their mental disturbances have violated the penal law" and makes a plea for the establishment of psychiatric clinics where the criminal may be studied in the light of "cold science." He finds that in the Indiana State Prison 60 per cent. of prisoners are mentally defective, of whom 12 per cent. are insane, 23 per cent. feeble minded, 8 per cent. epileptic, and 17 per cent. constitutionally inferior. Fifty per cent. of prisoners have defect of vision but considering the proportion of visually defective individuals among the populace

generally, this statement may or may not be of much significance. More significant is "an astonishing degree of sensory disturbances especially those of anesthesia," permitting "many minor surgical operations on convicts without general or local anesthesia." An interesting observation is made as to the predilection for tattooing. Tattoo marks are supposed to prevent blood poison and bring good luck. Why?

As an alienist would conjecture, Paranoia and Paranoid states furnish a "large quota of pathological crimes" but it is to be hoped for the credit of the legal and medical professions that the five patients admitted to the Indiana Hospital suffering from General Paresis had not previous to admission been convicted of crime.

A case of hysterical insanity of which conclusive details as to the disease are given, was electrocuted in the Indiana State Prison after parole (made against the physician's advice) and readmission—a striking example of miscarriage of justice.

Eight per cent. of prisoners in the Indiana State Prison are users of cocaine, morphine or other narcotic drugs.

The brochure is worth reading and if hypertrophy of sentiment has not obscured the author's judgment, his declaration that "a study covering more than ten thousand prisoners has led me to the belief that there is but a comparatively small number of criminals who deliberately, willfully and in a manner wholly responsible, practice crime," may well give pause to the sociologist. After he has taken time for catching his breath, the inquiry would be pertinent. "What is to be done about it?"

C. B. BURR.

DIAGNOSTIC METHODS: A guide for History Taking, Making of Routine Physical Examinations and the Usual Laboratory Tests for Students in Clinical Pathology, Hospital Internes, and Practicing Physicians. By Herbert Thomas Brooks, A.B., M.D., Memphis, Tenn. Third edition; Cloth. Price \$1.00. C. V. Mosby Company, St. Louis, Mo.

A handy useful volume.

CANDY MEDICATION. Bernard Fantus, M.D., Professor of Pharmacology and Therapeutics, University Illinois. Cloth, 82 pages. Price \$1.00. C. V. Mosby Co., St. Louis, Mo.

A practical presentation of methods to cover and make pleasant disagreeable remedies.

INFANT FEEDING. Lawrence T. Royster, M.D., Cloth, 14 pages. Price \$1.25. C. V. Mosby Co., St. Louis, Mo.

A useful manual that will be of material assistance to every general practitioner seeking to meet the problems of infant feeding that arise in his general practice.

A PRACTICAL TREATISE ON INFANT FEEDING AND ALLIED TOPICS. Harry Lowenburg, A.M., M.D., Assistant Professor of Pediatrics, Medico Chirurgical College of Philadelphia. Cloth, 373 pages, illustrated with 64 text engravings, and 30 original full page plates, eleven of which are in colors. F. A. Davis Co., Philadelphia. Price \$3.00 net.

We must admit that this is one of the best if not the best treatise on a subject that is of such vital importance. It should find its way into the hands

of every practitioner. The colored plates are invaluable. It is a pleasure to commend this book.

PROGRESSIVE MEDICINE. Vol. XIX No. 1. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M.D., \$6.00 per year. Lea & Febiger, Philadelphia.

This volume, issued in March, is devoted to Surgery of the Head and Neck, Surgery of the Thorax, Infectious Diseases, Diseases of Children, Phinology, Laryngology and Otology.

Frazier, instructively discusses and reviews the subject of surgery of the head in a manner calculated to alone repay one for the entire series. This medical series merit the cordial reception of the profession and should find a place in the reading of every practitioner.

SPEAKING OF OPERATIONS. By Irvin S. Cobb. Fifty Cents, Net. George H. Doran Company, 38 West 32nd Street, New York.

The funniest book ever written about a "painful" experience, by an author who yearly produces more than six hundred million laughs—according to figures computed on the approximate circulation of *The Saturday Evening Post*.

Cobb stands easily at the head of the long list of humorists now writing in America. If Cobb adds no new literary triumph to the many he has achieved, he will still be remembered as the author of "Back Home" and the creator of Old Judge Priest.

Miscellany

DO YOU KNOW THAT

Four per cent. of the inhabitants of certain sections of the South have malaria?

The United State Public Health Service has trapped 615,744 rodents in New Orleans in the past eighteen months?

The careless sneezer is the great grip spreader?

Open air is the best spring tonic?

Typhoid fever is a disease peculiar to man?

Measles kills over 11,000 American children annually?

There has not been a single case of yellow fever in the United States since 1905?

There is no Federal institution in the continental United States for the reception and care of lepers?

Plague is a disease of rodents?

Malaria is spread by a special mosquito?

House screening is a good disease preventive?

Fingers, flies and food spread typhoid fever?

Pellagra may be prevented or cured by proper diet?

The United States Public Health Service believes that the common towel spreads trachoma, a disease of the eyes?

Children from sanitary homes advance more rapidly in school than those from dirty premises?